ORDER NO. MD0306241C3

Service Manual

DVD/CD Player

DVD-F65GCS / DVD-F65GN

Colour

(S)... Silver Type

SPECIFICATIONS

Specification	
Signal system:	PAL 625/50, PAL 525/60, NTSC
Operating tempurature range:	+5 to +35°C (+41 to +95°F)
Operating humidity range:	5 to 90% RH (no condensation)

Discs played [8 cm or 12 cm]

(1) DVD-RAM, (DVD-VR compatible)
(2) DVD-Audio
(3) DVD-Video
(4) DVD-R (DVD-Video compatible)
(5) CD-Audio (CD-DA)
(6) Video CD
(7) SVCD (Confirming to IEC62107)
(8) CD-R/CD-RW
(CD-DA, Video-CD formatted discs)
(9) MP3/WMA*
- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- Compatible compression rate:
MP3: between 32 kbps and 320 kbps
WMA*: between 48 kbps and 192 kbps

(10) JPEG*

- Exif Ver 2.1 JPEG Baseline files

- Maximum number of pictures and groups recognized:
3000 pictures and 300 groups

- Picture resolution:
between 320 x 249 x and 6144 x 4096 pixels (Sub sampling is 4:2:2 or 4:2:0

(11) HighMAT Level 2 (Audio and Image)

Video output:

Output level:	**1Vp-p (75 Ω)**
Output terminal:	**Pin jack (1 system)**

S video output:

Y output level:	**1Vp-p (75 Ω)**
C output level:	**NTSC; 0.286Vp-p (75 Ω)**
	PAL; 0.300 Vp-p (75 Ω)
Output terminal:	**S terminal (1 system)**

Component video output:

(NTSC: 480P/480I, PAL: 576I)

Y output level:	**1Vp-p (75 Ω)**
PB output level:	**0.7Vp-p (75 Ω)**
PR output level:	**0.7Vp-p (75 Ω)**
Output terminal:	**Pin jack (Y:green, PB:blue, PR:red)**
Number of terminal:	**1 system**

Audio output:

Output level:	**2Vrms (1kHz, 0dB)**
Output terminal:	**Pin jack**
Number of terminal:	**2 channel: 1 system**

Audio performance:

(1) Frequency response:

● DVD (linear audio):	**4Hz-22kHz (48 kHz sampling)** **4Hz-44kHz (96 kHz sampling)**
● DVD audio:	**4Hz-88kHz (192 kHz sampling)**
● CD audio:	**4Hz-20kHz**

(2) S/N ratio:

● CD audio:	**115dB**

(3) Dynamic range:

● DVD (linear audio):	**102dB**
● CD audio:	**98dB**

(4) Total harmonic distortion:

● CD audio:	**0.0025%**

Digital audio output:

Optical digital output:	**Optical terminal**

Pickup:

Wave length:	**665nm/ 790 nm**
Laser power:	**CLASS 2/CLASS 1**

Power supply:	**AC 220-240 V, 50 Hz**
Power consumption:	**15 W**

Dimensions:	**430 (W) x 405 (D) x 59.7 (H) mm**
Mass:	**4.1kg**

Power consumption in standby mode: approx. 0.6 W

Note:

1. Specifications are subject to change without notice.
Mass and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C1011 & C1012 through a 10 Ω, 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at AC 220V-240V in NO SIGNAL mode should be ~163 mA .

2. Safety Precautions

2.1. General Guidelines

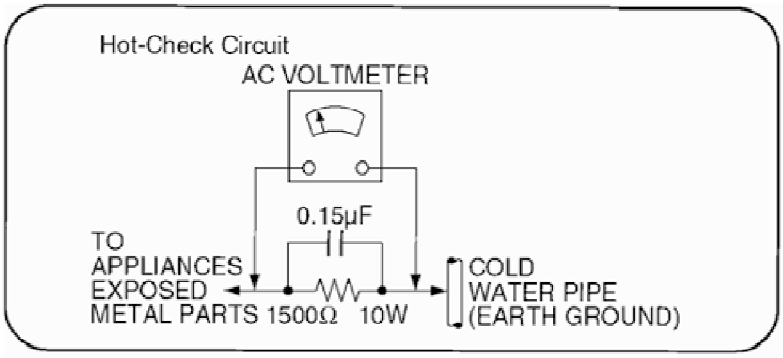
1. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
2. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
3. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

2.1.1. Leakage Current Cold Check

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the**

equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω .
When the exposed metal does not have a return path to the chassis, the reading must be ~.

Figure 1



2.1.2. Leakage Current Hot Check / (See Figure 1)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.**
3. **Use an AC voltmeter, with 1000 phms/volt or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

3. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equiped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equiped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder remover device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing**

together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

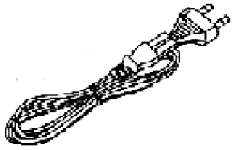
IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

4. Accessories

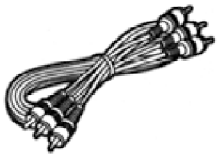
Remote control

AC main lead (For GCS only)



AC main lead (For GN only)

Audio/Video Cable



5. Precaution of Laser Diode

CAUTION :

This unit utilizes a class 1 laser.
Invisible laser radiation is emitted from the optical pickup lens.
Wavelength: 658nm/790nm.
Maximum output radiation power from pickup: 100 μ W/VDE
When the unit is turned on :

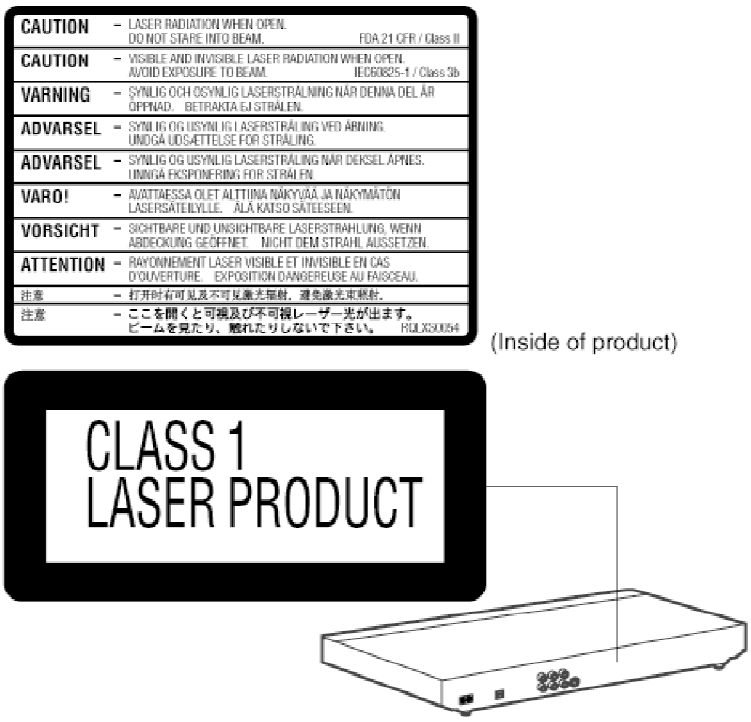
1. Do not look directly into the pick up lens.

2. Do not use optical instruments to look at the pick up lens.
3. Do not adjust the preset variable resistor on the pickup lens.
4. Do not disassemble the optical pick up unit.
5. If the optical pick up is replaced, use the manufacturer's specified replacement pick up only.
6. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN TH
SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ **Use of Caution Labels**



6. Handling the Lead-free Solder

6.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.
Caution:

- **Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).**
- **Pb free solder will tend to splash when heated too high (about 1100°F/600°C).**
- **When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.**

7. Cautions to be taken when handling Optical Pickup

The laser diode used inside optical pickup could be destroyed due to static electricity as a potential difference is caused by electrostatic load discharged from clothes or human body. Handling the parts carefully to avoid electrostatic destruction during repair.

7.1. Handling Optical Pickup

1. **Do not impact on optical pickup as the unit structurally uses an extremely precise technology.**
2. **Short-circuit the flexible cable of optical pickup remove from the circuit board using a short-circuit pin or clip in order to prevent laser diode from electrostatic destruction (Refer to Fig. 7.1 and Fig. 7.2)**
3. **Do not handle flexible cables forcibly as this may cause snapping. Handle the parts carefully (Refer to Fig. 7.1)**
4. **A new optical pickup is equipped with an anti-static flexible cable. After replacing and connecting to the flexible board, cut the anti-static flexible cable. (Refer to Fig. 7.1)**

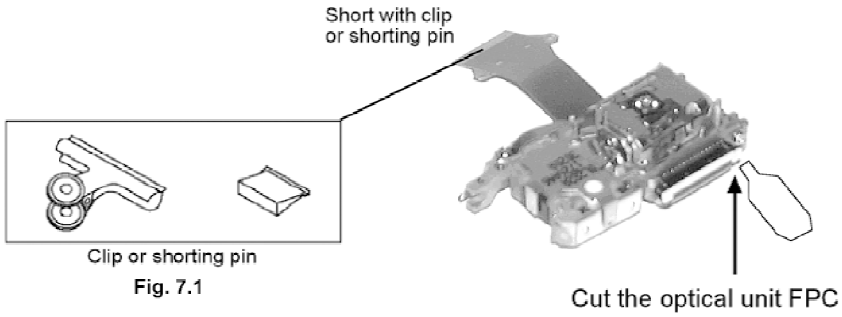


Fig. 7.1

7.2. Cautions to be taken during replacement of Optical Pickup

Supplied optical pickup is equipped with a short clip found its flexible cable in order to prevent electrostatic destruction of laser diode. Before connection, remove the short clip, and check that the short land is opened. (Remove solder if the part is short-circuit).

7.3. Grounding for Preventing Electrostatic Destruction

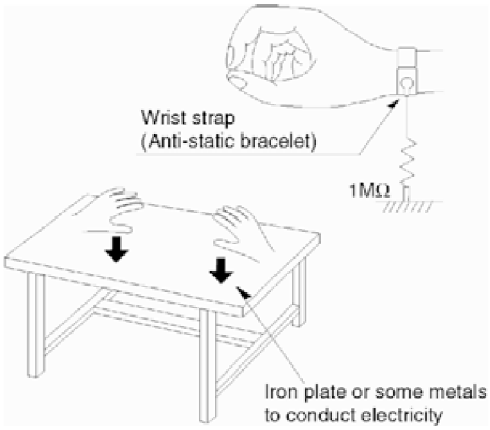
1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity accumulated in your body. (Refer to Fig. 7.2)

2. Work place grounding
Place a conductive material (conductive sheet) or ironboard where optical pickup is placed. (Refer to Fig. 7.2)

Note :

Keep your clothes away from optical pickup as wrist strap does not release the static electricity charged in clothes.

Fig. 7.2

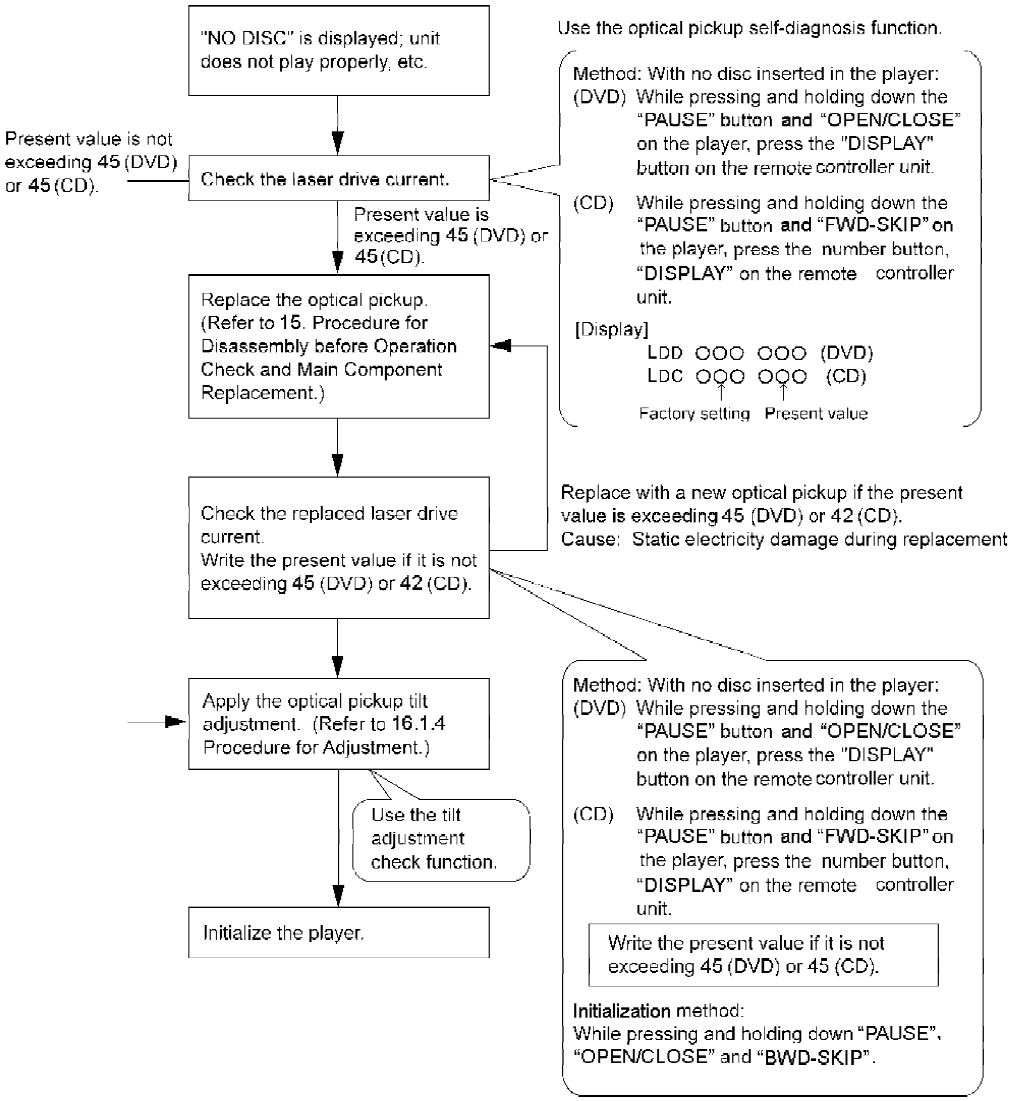


8. Optical Pickup Self-Diagnosis and Replacement Procedure

8.1. Self-diagnosis

This unit is equipped with the optical pickup self-diagnosis function and the tilt adjustment check function. Follow the procedure described below during repair in order to perform self-diagnosis and tilt adjustment effectively. Especially when “NO DISC” is displayed, be sure to apply the self-diagnosis function before replacing with an optical pickup. Replacement of optical pickup generally requires when the present value of laser drive exceeds 45 (DVD) or 45 (CD).

Note:
Start diagnosis within three minutes after turning on the power (as diagnosis fails when the unit becomes warm).



8.2. Cautions to Be Taken During Replacement of Optical Pickup and Spindle Motor

Before replacing the optical pickup and spindle motor, check a total usage time respectively. Follow the checking method described below.

Item	Player mode and button combination	Display
Checking DVD, CD laser usage time (Timer 1 data)	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “5” button on the remote control unit.	T1_xxxx_yyyy / xxxx(DVD), y total time is displayed with a digit number by the ten hours You may have to press “FL-S on remote control to veiw rer text due to FL display not abl display full length.
Checking spindle motor usage time (Timer 2 data)	In STOP mode, press PAUSE and FWD-SKIP buttons on the player, and “6” button on the remote control unit.	T2_xxxx / xxxx: total time is displayed with a four-digit nu the ten hours. You may have to press “FL-S on remote control to veiw rer text due to FL display not abl display full length.
Resetting DVD, CD laser usage time	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and “5” button on the remote control unit	T1_0000_0000 You may have to press “FL-S on remote control to veiw rer text due to FL display not abl display full length.
Resetting spindle motor usage time	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and “6” button on the remote control unit.	T2_0000 You may have to press “FL-S on remote control to veiw rer text due to FL display not abl display full length.

8.2.1. Cautions to be taken during replacement of optical pickup

Optical pickup could be damaged due to the static electricity discharged from human body. Wear proper protection gear against static electricity during optical pickup and its peripheral repair. (Refer to “Cautions to Be Taken When Handling Optical Pickup”.)

- Do not touch laser diode, actuator and their peripherals.

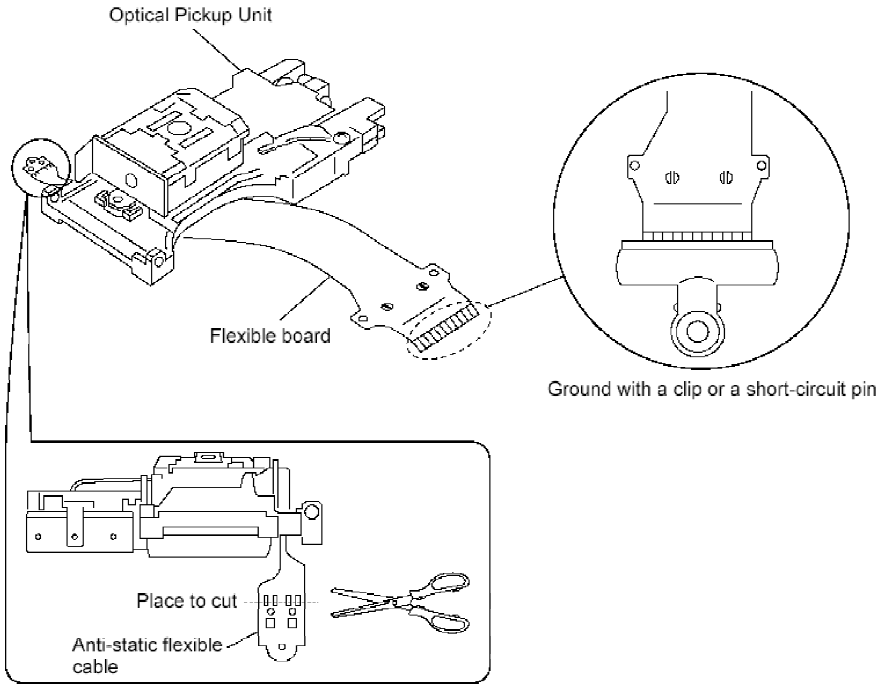
- Do not check laser diode with a tester and such. (The tester will be destroyed.)

- For short-circuiting or removing laser diode, the use of an anti-static soldering iron is recommended. (Recommended model: HAKKO ESD product)

- Solder the land of the flexible cable in the optical pickup.

Note:

If an anti-static soldering iron is not available, short-circuit the terminal surface of the flexible cable and then the land using a clip or equivalent device.



9. Self-Diagnosis Function

This unit is equipped with the self-diagnosis function, which displays an error when it occurs, for use during servicing.

9.1. Automatic Displayed Error Codes

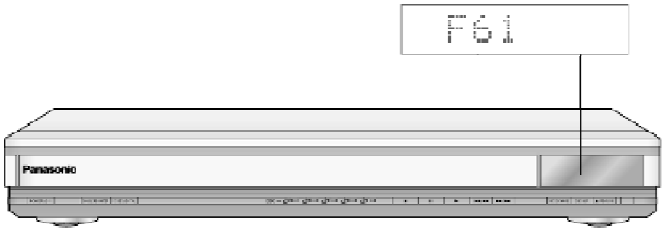
9.1.1. Automatic Display Function

For a power unit error, the code is automatically displayed.

F61:

Automatically displayed on the LCD of the player.

Fig. 9-1



9.1.2. Re-Display

- For F61 Display

- When the code, F61 is displayed, the power is automatically turned off.

- The code, F61 is displayed for three seconds, and then the current time appears.

- To retrieve the code, turn on the power button so that the code F61 appears, however, is switched to time display after three seconds,

and the power is automatically turned off.

9.1.3. Description of Error Code

9.1.3.1. F61

- State, Condition

  When the power is turned on, the unit is automatically turned off. The power does not turn on.

- Cause, Troubleshooting

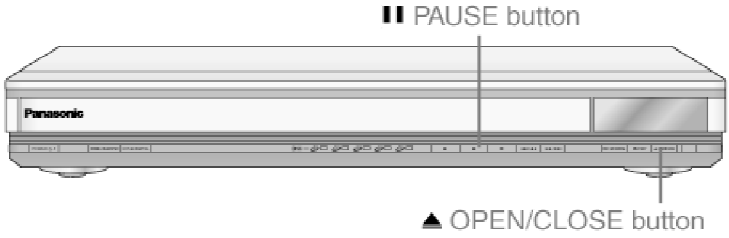
  Power circuit system failure and/or direct current flown to speaker terminal / Identify the cause and replace with new parts.

9.2. Memorized Error Codes

9.2.1. Activating Self-Diagnosis Function and Displaying Method

1. Turn on the power.
2. Select DVD/CD function. With no DVD/CD inserted in the player, press and hold down the ⏸ PAUSE button for at least two seconds, and press the ⏏ OPEN/CLOSE button for at least two seconds in order to display “F_ _ _”.
3. Press the ”0” button on remote control. If a memorized error is detected, the result of self diagnosis is displayed. / If several errors are detected, press the ■ button to display each.

Fig. 9-2



9.2.2. Re-Display

- Press the power button to turn off the power, and then turn on the power.
- The details of self diagnosis are stored in the unit memory. / To retrieve them, follow the procedure described the above, “Activating Self-Diagnosis Function and Displaying Method”.

9.3. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and the remote control unit.

Player buttons	Remote control unit buttons	Application
PAUSE + OPEN/ CLOSE	0	Displaying the UHF display F _ _ _
	5	Jitter check, tilt adjustment *Display show J_xxx_yyy_zz “yyy” and “zz” shown to the right have nothing to do with the jitter value. “yyy” is the error counter, while “zz” is the focus drive value. Refer to Section 16.1.4 for Optical Adjustment (Optical Pickup Tilt Adjustment)
	6	Checking the region numbers and broadcast system
	7	Checking the program version
	9	Lighting Confirmation Function of Display Tube
	DISPLAY	Checking the laser drive current
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)
PAUSE SKIP/ SEARCH<< OPEN/CLOSE		Initializing the DVD player (restoring factory preset settings) *Use when replacing a microprocessor, microprocessor peripheral, or P.C.B.

9.4. DVD/CD Self-Diagnosis Error Code Description

Error Code	State, Conditon	Cause, Troubleshooting
H15	The disc tray cannot be opened: it closes spontaneously.	Disc tray open/close detection switch (S failure. / (Check and replace)
H16	The disc tray cannot be closed: it opens spontaneously.	

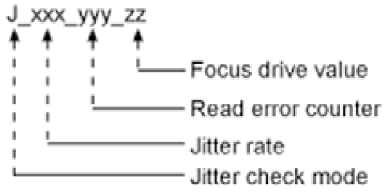
Error Code	Meaning	Details
U. H. Error		
U11	Focus servo failure	
H01	Tray loading failure	
H02	Spindle servo failure	(Spindle servo, DSC, SP motor, CLV ser
H03	Traverse motor failure	
H04	Tracking servo error	
H05	Seek timeout failure	
DSC system		
F500	DSC failure	DSC stops due to servo failure. / (Startu failure, etc.)
F501	DSC not Ready failure	Communication failure between DSC an computer / (No communication because does not move)
F502	DSC Time out failure	See F500.
F503	DSC communication failure	Communication failure (Result failure oc after communication command is transı
F505	DSC Attention Error	See F500.
F506	Invalid media	Disc is placed upside down; TOC is unr or invalid disc is inserted.
Disc Code		
F103	Ilegal highlight position	Disc standard is possibly illegal when h is displayed.
IIC Error		
F4FF	Forced initialization failure (Time out)	
F880	Unsuitable task number	When a message arrives from not existi
F890	A message is sent during AV task transmission	During transmission of a message to AV
F891	Unable to transmit a message to AV task	When transmission of a message to AV starts
F893	FROM altered	
F894	EEPROM failure	
F8A0	Unsuitable message command	When transmission of a message to AV starts

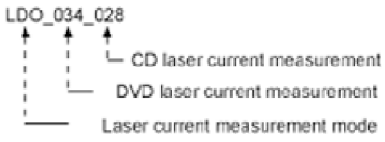
9.5. Error Codes Stored During No Play

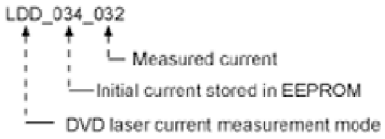
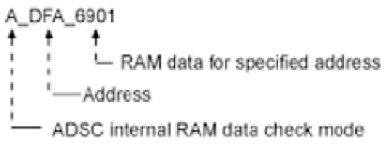
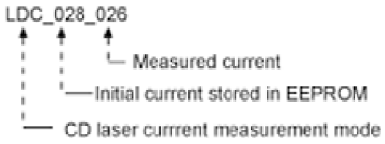
Error Code	Meaning	System Computer Item	Setting Task	In er sy co
F0BF	6) Unable to replay due to physical layer identification failure	PCND_NOPLAY_PHYSICAL 0x50	DriveManager	0xD0
F0C0	8) DVD: Unable to replay due to no DVD Video/Audio/VR	PCND_NOPLAY_VIDEO 0x70	DiscManager	0xD0
F0C1	9) DVD: Prohibited due to illegal regional code	PCND_NOPLAY_RCD 0x80	DiscManager	0xD0
F0C2	A) DVD: No replay due to PAL system	PCND_NOPLAY_PAL 0x90	DiscManager	0xD0
F0C3	B) DVD: All title replay prohibited in parental setting	PCND_NOPLAY_PTL 0xA0	DiscManager	0xD0
F0C4	C) VCD: Prohibited due to PHOTO CD format	PCND_NOPLAY_PHOTOCD 0xB0	DiscManager	0xD0
F0C5	D) VCD/CD: Prohibited due to CD-ROM without CD-DA	PCND_NOPLAY_CDROM 0xC0	DiscManager	0xD0

9.6. Service Mode Table 2

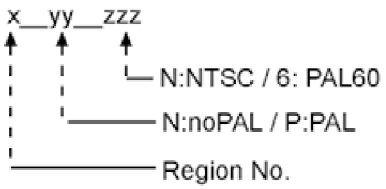
Pressing various button combinations on the player and remote control unit can activate the service modes.

Item	Player mode and button combination	Function	Display	Can m
Jitter check	In STOP mode, press “PAUSE” and “OPEN/ CLOSE” buttons on the player, and “5” button on the remote control unit.	Jitter check. Jitter check is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is cause by mirror error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the erroe persists even after retry, the counter may jump by two or more.	 Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation. You may have to press “FL-SELECT” on remote control to veiw remaining text due to FL display not able to display full length.	Pres or OI CLOS butto

Item	Player mode and button combination	Function	Display	Can m
Error code check	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" buttons on the player, and "0" button on the remote control unit. * With pointing of cursor up and down on display, the panel controller switches serial number of history and sends out the command accordingly.**	**Error code check. The latest error code stored in EEPROM is displayed.**	**Error code (play_err) is express in the following convention:- Error code=0 x DAXX is expressd : → nn UXX Error code= 0 x BDXX is expressed: → nn HXX Error code= 0 x DXXX is expressed: → nn FXXX Error code= 0 x 0000 is expressed: → nn F- - - *"nn" denotes the serial number of history.**	**Canc auto 5 sec later**
Initial setting of laser drive current	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" buttons on the player, and "PAUSE" button on the remote control unit.**	**Initial setting of laser drive current initial current value for each of DVD laser and CD laser is separately saved in EEPROM.**	 **The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is switched on. You may have to press "FL-SELECT" on remote control to veiw remaining text due to FL display not able to display full length.**	**Canc auto 5 sec later.**

Item	Player mode and button combination	Function	Display	Can m
DVD laser drive current measurement	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" buttons on player, and "DISPLAY" button on the remote control unit.**	**DVD laser drive current measurement** **-DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM.** **After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)**	 **The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.** **You may have to press "FL-SELECT" on remote control to veiw remaining text due to FL display not able to display full length.**	**Canc auto 5 sec later.**
ADSC internal RAM data check	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" button on the player, and "RETURN" button on the remote control unit.**	**ADSC internal RAM data check** **-ADSC internal RAM data is read out and displayed. / Change the address with CLEAR key operation to show the data for 11 addresses.**	 **The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFah is 6901h.** **You may have to press "FL-SELECT" on remote control to veiw remaining text due to FL display not able to display full length.**	**Press or OI CLOS butto**
CD laser drive current measurement	**In STOP mode, press "PAUSE" and "FWD-SKIP" buttons on the player, and "DISPLAY" button on the remote control unit.**	**CD laser drive current measurement.** **CD laser drive current measured and the result is displayed together with the initial value stored in EEPROM.** **After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)**	 **The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.** **You may have to press "FL-SELECT" on remote control to veiw remaining text due to FL display not able to display full length.**	**canc auto 5 sec later.**

Item	Player mode and button combination	Function	Display	Can m
Version display	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" buttons on the player, and "7" button on the remote control unit.**	**Micro-processor firmware version display.**	srrr_xyzzz System controller release number System controller model number System controller generation Panel controller release number Panel controller model number	**canc auto 5 sec later.**
Lighting of display tube	**In STOP mode, press "PAUSE" and "OPEN/ CLOSE" buttons on the player, and "9" button on the remote control unit.**	**Lighting of display tube**	**-**	**Pres or OI CLO butt**
Dealer's lock	**In STOP mode, press "STOP" button on the player, and "POWER" button on the remote control unit.**	**Dealer's lock.** **The lock is switched ON or OFF.** **WHen dealer;s lock is ON, it prohibits switching off of the secondary power and tray opening.** **When the lock is switched, its ON/OFF status is stored in EEPROM.**	**-"LOCKED" sign appears when dealer's lock is swiched on, or when secondary power key or tray opening key is pressed while the lock is on.** **-"UNLOCKED" sign appears when dealer's lock is switched off.**	**Reve oper unlo**
Initialization	**In STOP mode, press "PAUSE", "BWD-SKIP" and OPEN/ CLOSE buttons on the player for 3 seconds or longer.**	**Initialization.** **User settings are cancelled and player is iniitialized to factory setting.**	**"INIT"**	

Item	Player mode and button combination	Function	Display	Can m
Region display	In STOP mode, press “PAUSE” and “OPEN/ CLOSE” buttons on the player, and “6” button on the remote control unit.	Region display		Canc auto 5 sec later.

9.7. Service Mode Table 3

Item	Player mode and button combination	Function	Display	Canc me
Timer 1 check	In STOP mode, press “PAUSE” and “FWD-SKIP” buttons on the player, and “5” button on the remote control unit. Press “FL SELECT” on remote control unit for next page of information.	Timer 1 check. Laser operation timer. Operation time is measured separately for DVD laser and CD laser.	T1_1234_5678. Shown to the left is DVD laser time, and to the right is CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000: will follow “9999”. (You may have to press the “FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancell automa second
Timer 1 reset	While displaying Timer 1 data, press “STOP” and “FWD-SKIP” buttons on the player, and “5” button on the remote control unit.	Timer 1 reset. Laser operation timer. Operation time of both DVD laser and CD laser is reset all at once.	T1_0000_0000. (You may have to press the :FL select” button on the remote control to view the remaining text when the text is too long to display on the FL at one time).	Cancell automa second

Item	Player mode and button combination	Function	Display	Canc me
Timer 2 check	In STOP mode, press “PAUSE” and “FWD-SKIP” buttons on the player, and “6” button on the remote control unit.	Timer 2 check. Spindle motor operation timer.	T2_1234. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.	Cancell automa second
Timer 2 reset	While displaying Timer 2 data, press “STOP” and “FWD-SKIP” buttons on the player and “6” button on the remote control unit.	Timer 2 reset. Spndle motor operation timer.	T2_0000	Cancell automa second

9.8. Lock Function

This function prohibits removal of disc and some disc operations to prevent loss of disc at a shop during sales promotion or equivalent occasions. / While this function is activated, the player displays “___LOCKED_” if any button is touched.

9.8.1. Setting

- Prohibiting removal of disc

1. **Select the DVD/CD function.**
2. **Press and hold down the ■ button on the player and the power button on the remote controller unit for at least three seconds. (The message, “___LOCKED_” appears when the function is activated.)**

Note:

OPEN/CLOSE ⏏ button are invalid and the player displays “___LOCKED_” while the lock function mode is entered.

- Prohibiting operation of selector and disk

1. **Select the DVD/CD function.**
2. **Press and hold down the ▶ button on the player and the power button on the remote controller unit for at least three seconds. (The message, “___LOCKED_” appears when the function is**

activated.)

Note:
The following buttons are invalid and the player displays "___LOCKED_" while the lock function mode is entered.

Main unit: [POWER] , [PLAY] ,

Remote control: [POWER] , [PLAY MODE] , [CANCEL] , [PLAY] , [MENU] ,

[TOP MENU] , [◀] , [▶] , [▲] , [▼] ,

[ENTER] , [ZOOM]

9.8.2. Exiting Lock Function

While the lock function is activated, press the buttons which are used to enter the mode. ("___LOCKED_" appears for one second, and then "_UNLOCKED_" appears. (After this, the lock function is deactivated.)

9.9. Things to Do After Repair

Follow the procedure described below after repair.

1. **While the power is on, press the⏏button to close the tray.**
2. **Press the power button to turn off the power.**
3. **Unplug the power cable.**

Note:
It is prohibited to unplug the power cable while the tray is opened and to close the tray manually.

10. Cautions To Be Taken During Servicing

10.1. Recovery after the dvd player is repaired

- **When FLASH ROM or Module (2) P.C.B. is replaced, carry out the recovery processing to optimize the drive. Playback the recovery disc to process the recovery automatically.**
- **Recovery disc (Product number=RFKZD03R004)**
- **Performing recovery**

1. **Load the recovery disc (Product number: RFKZD03R004) to the player and run it.**
2. **Recovery is performed automatically. When it is finished, a message appears on the screen.**
3. **Remove the recovery disc.**
4. **Turn off the power.**

Note:
This unit requires no initialization process carried out after the traditional DVD players were repaired. When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item “Initialization” in 9.6 is carried out. Write down the contents of the setting before recovery processing and reset the player.

10.2. DVD Player Firmware Version Upgrade Process

Firmware of DVD player may upgrade to conform to improvement of its performance and quality including operational range, playability of non-standardized discs, etc. The version upgrade disc contains the recovery function, and the recovery disc is not necessary.

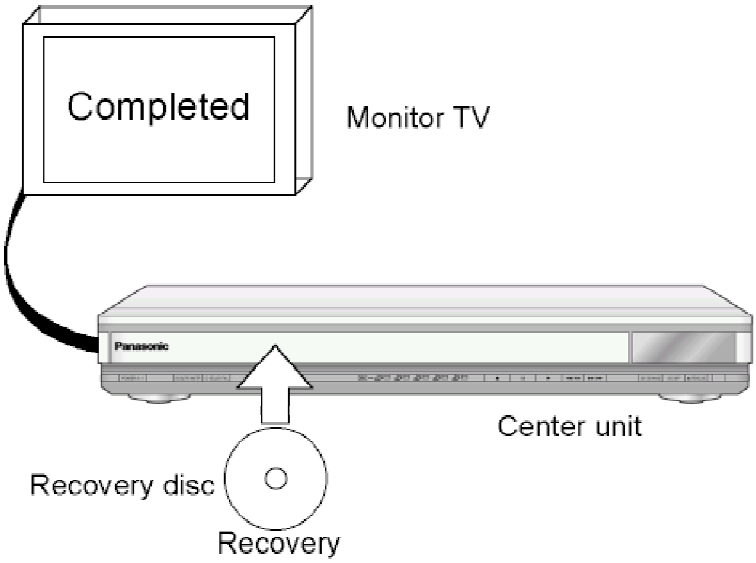
Note:
Version upgrade process cannot be complete if the AC power is cut off due to power failure and other occasions during the process. If this occurs, replace FLASH ROM and restart version upgrade. Version upgrade disc number is informed when ordered.

10.3. Firmware Version Upgrade Process by Using Disc and Recovery Process

- Recovery process

- Firmware version upgrade process

Both of the above procedures automatically start when the recovery disc is replayed.General CD -R disc allows version upgrade process and recovery process, making version upgrade through disc simple. / Recovery process: Optimization process of player after replacement of FLASH ROM, EEPROM, or module circuit board / Version upgrade process: Renewal of firmware for improvement of operational range and performance



10.3.1. Self-Diagnosis Function

- Total usage time display (spindle motor, DVD/CD laser)

- ADSC internal RAM display

- Others: Last error count.....20 items

Efficiency of failure diagnosis is expected to improve by using the above functions together with the repair process.

[Purpose of Use]
Total usage time display: used for estimating a failure due to exhausted spindle motor, laser, or other parts.
ADSC internal RAM display: used for deciding servo system failure according to servo learning values.

10.4. Using Recovery Disc

10.4.1. Recovery Process

1. Insert the recovery disc (RFKZD03R004) to the player to replay.
2. The recovery process automatically starts, and a message of completion prompts on the screen.
3. Remove the disc.
4. Turn off the power.

10.4.2. Version Upgrade Process

1. Insert the recovery disc to the player to replay.
2. The version of player is automatically checked and prompts if necessary.
3. Select version upgrade process using the cursor keys on the remote controller unit. (Select YES or NO)
4. a. If YES is selected, the process starts.
   b. If NO is selected, only the recovery process is applied.
5. a. When the version upgrade process is complete, a message of completion appears on the screen. Remove the disc.
   b. Follow the instruction appearing on the screen, and remove the disc.
6. Turn off the power.

10.5. Total Usage Time Display

1. Details of Operation/Display

Total usage time of DVD/CD lasers
Time is shown by the ten hours in the decimal digit.

Total usage time of spindle motor
Time is shown by the ten hours in the decimal digit.

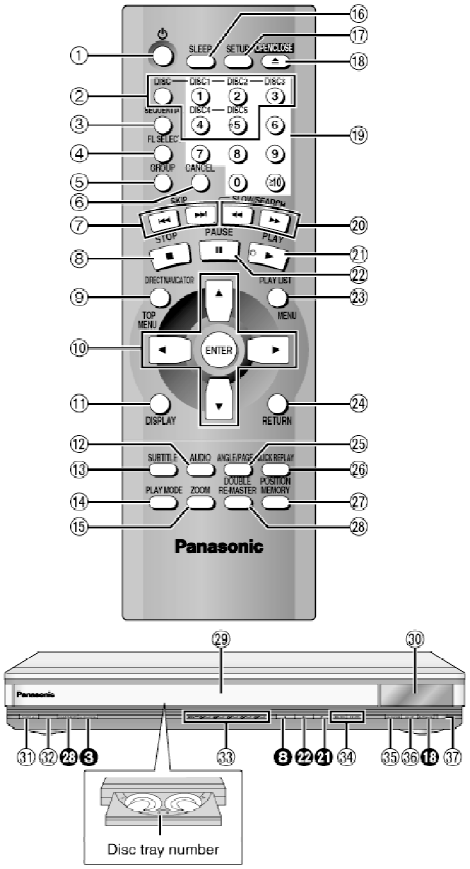
Keys for Operation: / Laser usage time: While the player is stopped and no disc is inserted, press both the ■ button on the player and the ▲ button on the remote controller unit. / Spindle motor usage time: While the player is stopped and no disc is inserted, press both the ■ button on the player and the ► button on the remote controller unit. / / To reset the usage time, while the usage time is displayed: / Laser usage time: press both the ■ button on the player and the ▼ button on the remote controller unit. / Spindle motor usage time: press both the ■ button on the player and the ◄ button on the remote controller unit.

2. Purpose of Use

To obtain reference data of laser and spindle motor systems during failure diagnosis. / To check faulty parts during re-repair.

11. Operation Procedure

Control reference guide



- Buttons such as ❸ function the same as those on the remote control.
- The actual marking of the standby/on switch depends on the area. Illustrations in these operating instructions use the markings shown in the above illustration.

① Standby/on button (⏻)
② Disc select button (DISC), Disc buttons (DISC 1–DISC 5)
③ Sequential button (SEQUENTIAL)
④ FL select button (FL SELECT)
⑤ Group button (GROUP)
⑥ Cancel button (CANCEL)
⑦ Skip buttons (⏮, ⏭ SKIP)
⑧ Stop button (■ STOP)
⑨ Top menu, Direct navigator button (TOP MENU, DIRECT NAVIGATOR)
⑩ Cursor buttons (▲, ▼, ◄, ►), Enter button (ENTER)
⑪ Display button (DISPLAY)
⑫ Audio button (AUDIO)
⑬ Subtitle button (SUBTITLE)
⑭ Play mode button (PLAY MODE)
⑮ Zoom button (ZOOM)
⑯ Sleep button (SLEEP)
⑰ Setup button (SETUP)
⑱ Drawer open/close button (⏏ OPEN/CLOSE)
⑲ Numbered buttons (1–9, 0, ≥10)
⑳ Slow/Search buttons (◄◄, ►► SLOW/SEARCH)
㉑ Play button (► PLAY)
㉒ Pause button (❚❚ PAUSE)
㉓ Menu, Play list button (MENU, PLAY LIST)
㉔ Return button (RETURN)
㉕ Angle/page button (ANGLE/PAGE)
㉖ Quick replay button (QUICK REPLAY)
㉗ Position memory button (POSITION MEMORY)
㉘ Double re-master button (DOUBLE RE-MASTER)
㉙ Drawer
㉚ FL Display
㉛ Standby/on switch (⏻/I)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
㉜ Standby indicator (⏻)
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
㉝ Disc indicators (DISC 1–5)
㉞ Skip, Search buttons (⏮/◄◄, ►►/⏭)
㉟ Disc exchange button (DISC EXCHANGE)
㊱ Disc skip button (DISC SKIP)
㊲ Remote control signal sensor

12. Disc information

■ Discs that can be played

DVD-RAM	DVD-Audio	DVD-Video	DVD-R	SVCD	Video CD	CD	CD-R/RW
Shown as "DVD-VR" on the display				Conforming to IEC62107			
RAM	DVD-A	DVD-V		VCD		CD	WMA* MP3 JPEG*

*DVD-F61 is not compatible with WMA, JPEG, or HighMAT. References to them apply only to DVD-F65.

Use discs with the above logos and that conform to specifications. The unit cannot play other discs correctly. Do not use irregularly shaped discs (e.g. heart-shaped), as these can damage the unit.

It may not be possible to play CD-R, CD-RW, DVD-R and DVD-RAM in all cases due to the type of disc or condition of the recording.

■ Discs that cannot be played

DVD-ROM, CD-ROM, CDV, CD-G, +RW, DVD-RW, CVD, SACD, Divx Video Discs, Photo CD, DVD-RAM that cannot be removed from their cartridge, 2.6-GB and 5.2-GB DVD-RAM, and "Chaoji VCD" available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

■ Region number

The player plays DVD-Video marked with labels containing the region number or "**ALL**".

Region	Number	Example
U.S.A. and Canada	1	
Asia	3	
Australia and N.Z.	4	

■ Built-in decoders

This unit has Dolby Digital and DTS decoders so you can enjoy these systems in stereo without connecting a separate decoder.

■ Video systems

Units for Asia, Australia and N.Z.:

- This unit can play PAL and NTSC, but your television must match the system used on the disc.
- PAL discs cannot be correctly viewed on an NTSC television.
- This unit can convert NTSC signals to PAL 60 for viewing on a PAL television (➔ page 18, Video—NTSC Disc Output).
- Output is interlace (576I) when playing PAL discs.

Units for the U.S.A. and Canada:

NTSC is used. This unit converts still pictures on PAL system DVD-Audio discs for play on NTSC video systems. The picture is compressed to show it in its entirety, but this may cause it to be stretched vertically.

■ Playing DVDs and Video CDs

The producer of these discs can control how they are played so you may not always be able to control play as described in these operating instructions (for example if the play time is not displayed or if a Video CD has menus). Read the disc's instructions carefully.

■ DVD-RAM discs

The DVD-RAM you can play on this unit are those recorded with DVD video recorders, DVD video cameras, personal computers, etc. using Version 1.1 of the Video Recording Format (a unified video recording standard).

- Remove discs from their cartridges before use and return them when you are finished, making sure that the labels of the disc and cartridge face the same way.
- Some parts of the disc, for example where one program ends and another begins, may not play smoothly.

■ DVD-R discs

Panasonic DVD-R recorded and finalized on a Panasonic DVD video recorder or DVD video camera are played as DVD-Video on this unit.

■ CD-R and CD-RW discs

This unit can play CD-R/RW (audio recording disc) recorded with CD-DA, video CD, SVCD (conforming to IEC62107), WMA, MP3, or JPEG. Close the session or finalize after recording.

See page 11 for more information about WMA, MP3, and JPEG.

■ HighMAT discs

This unit is compatible with HighMAT discs containing WMA, MP3, and/or JPEG files.

■ Disc structure

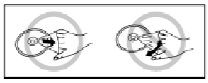
Disc structure and the labels given to the items on discs depend on the disc type.

Track: the smallest division on DVD-Audio, CDs, and Video CDs, or a single WMA/MP3 file.
Chapter: the smallest division on DVD-Video.
Group: collections of tracks on DVD-Audio and equivalent to folders or albums on data discs.
Title: the largest division on DVD-Video, usually an entire movie.
Program: the division on DVD-RAM equivalent to a single recording.
Picture: a single JPEG file.
Play list: the largest grouping on a HighMAT disc, or a group of scenes on DVD-RAM.
Scene: DVD-RAM program sections specified and grouped into play lists on a DVD video recorder.
Content: covers tracks and pictures on HighMAT discs.

■ To clean discs

DVD-Audio, DVD-Video, Video CD, CD

Wipe with a damp cloth and then wipe dry.



DVD-RAM, DVD-R

- Clean only with an optional DVD-RAM/PD disc cleaner (LF-K200DCA1, where available).
- Never use cloths or cleaners for CDs etc.

■ Handling precautions

- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not attach labels or stickers to discs. (Do not use discs with exposed adhesive from tape or left over peeled-off stickers.)
- Do not use scratch-proof protectors or covers.
- Do not use discs printed with label printers available on the market.

13. About HighMAT

13.1. What is HighMAT?

This word combines the abbreviations of Matsushita Electric Industrial Co., Ltd. and High Performance Media Access Technology, and is a trademark of Microsoft Corporation. The products with the HighMAT logo shown below are made according to the HighMAT standard. HighMAT is a format that allows users to save digital contents such as photographs, audio, and images on a CD. This gives consistency in the way of reading data when general consumer

products (such as DVD players) and PCs are used and thus, it is easy to operate for the user.

13.2. Why use HighMAT?

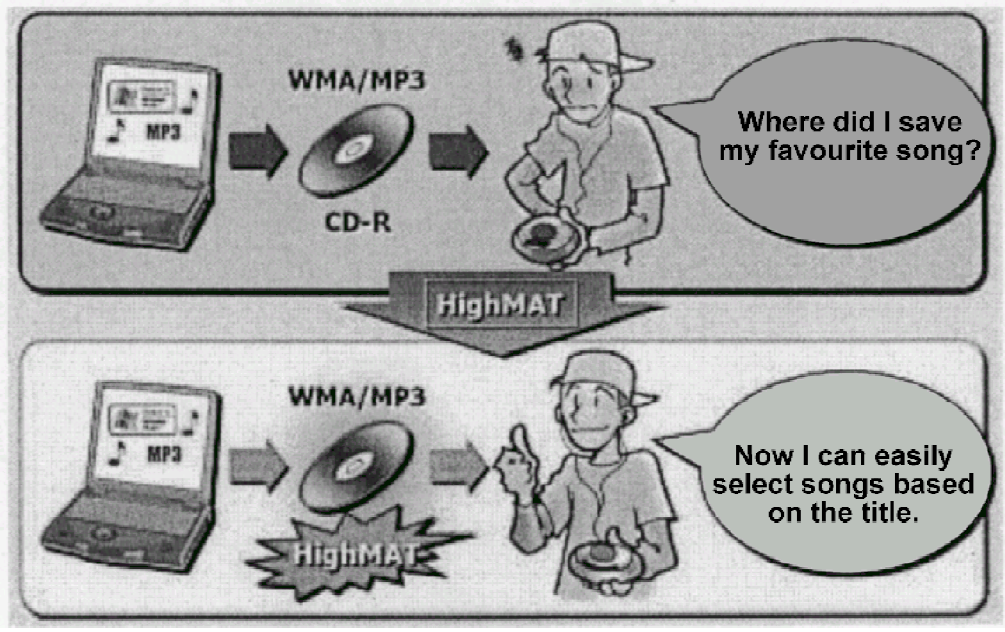
Up to now, there was no harmonized standard from playing digital content stored in CD-ROM formats (including CD-R) on consumer products like DVD players.Therefore, we used to have probblems such as follow:

- There was no common play list or attached information on contents, which is called metadata.
- The data compression method differed according to the equipment.
- As the number of CD-ROMs recorded increased retrieved the contents became more difficult.
- Because display and operation methods were different depending on the equipment, the play order of the content on the same disc could change.

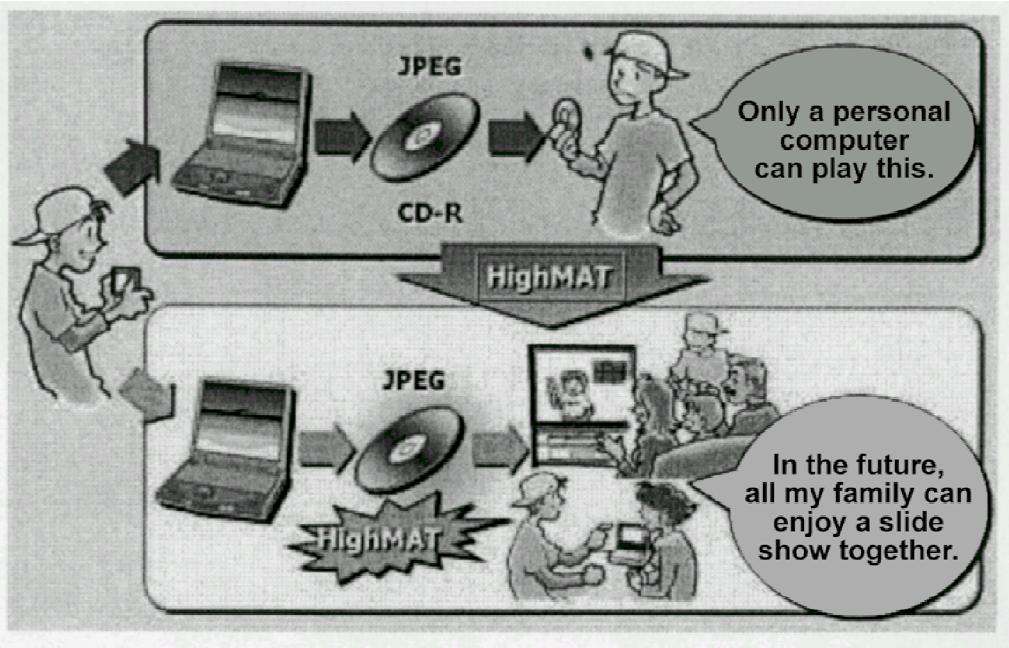
13.3. The advantages of using HighMAT

Applying the HighMAT standard will solve the following problems and will improve usability.

- It will create a common user interface for both PC and consumer products.



- Regardless of the types of consumer products, such as DVD players, portable CD players, car stereo, and microcomputers, a consistent way to play for digital content will be created, and it will make it easier to retrieve data.

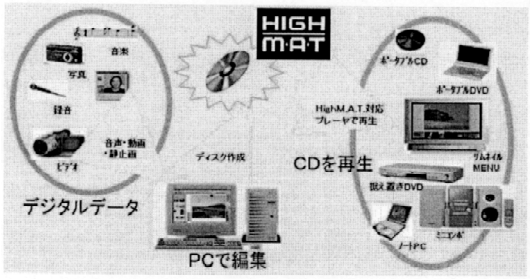


- You can also play digital content on the disc, which was created in accordance with the HighMAT format with a conventional CD-ROM player.

13.4. Outline of the HighMAT standard

1. Recording medium

- CD-R/CD-RW
- Supports ISO 9660 Level Expanded Joliet
- For multiple session



2. Support data format

- Level 1 player: WMA, MP3 (MPEG-1 Audio Layer 3)
- Level 2 player: WMA, MP3 (MPEG-1 Audio Layer 3), JPEG
- Level 3 player: WMA, MP3 (MPEG-1 Audio Layer 3), JPEG, WMV, MPEG4 (optional)

3. Limitation of data format

- **WMA, MP3 (MPEG-1 Audio Layer 3) 64 kbps - 160.999 kbps, 44.1 KHz, stereo, fixed bit rate/ variable bit rate.**
- **WMA, V2 and above, excluding Lossless/Voice/Pro**
- **JPEG: Max 6M pixel, Maximum file size: 3 MB**

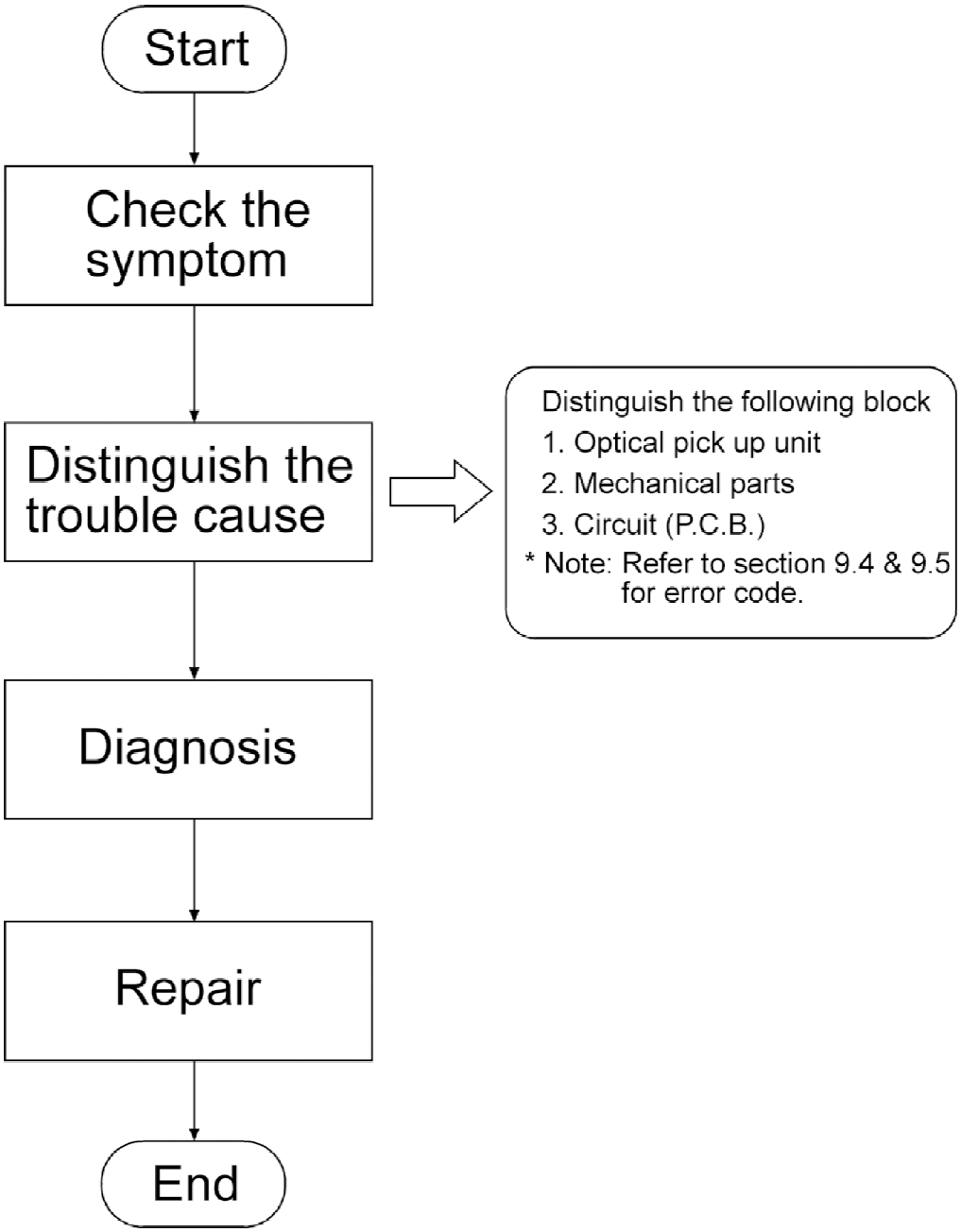
4. Limitations regarding the number of files on the media, etc.

- **Total number of audio files: Maximum 450**
- **Total number of still picture files: Maximum 999**
- **Total number of animation files: Maximum 200**
- **Total number of directories: Maximum 400**
- **Length of a file name: Maximum 108 characters (Unicode)**
- **Total number of play lists: Maximum 200**
- **Number of contents in the playlist: Maximum 900**

5. Composition of HighMAT disc

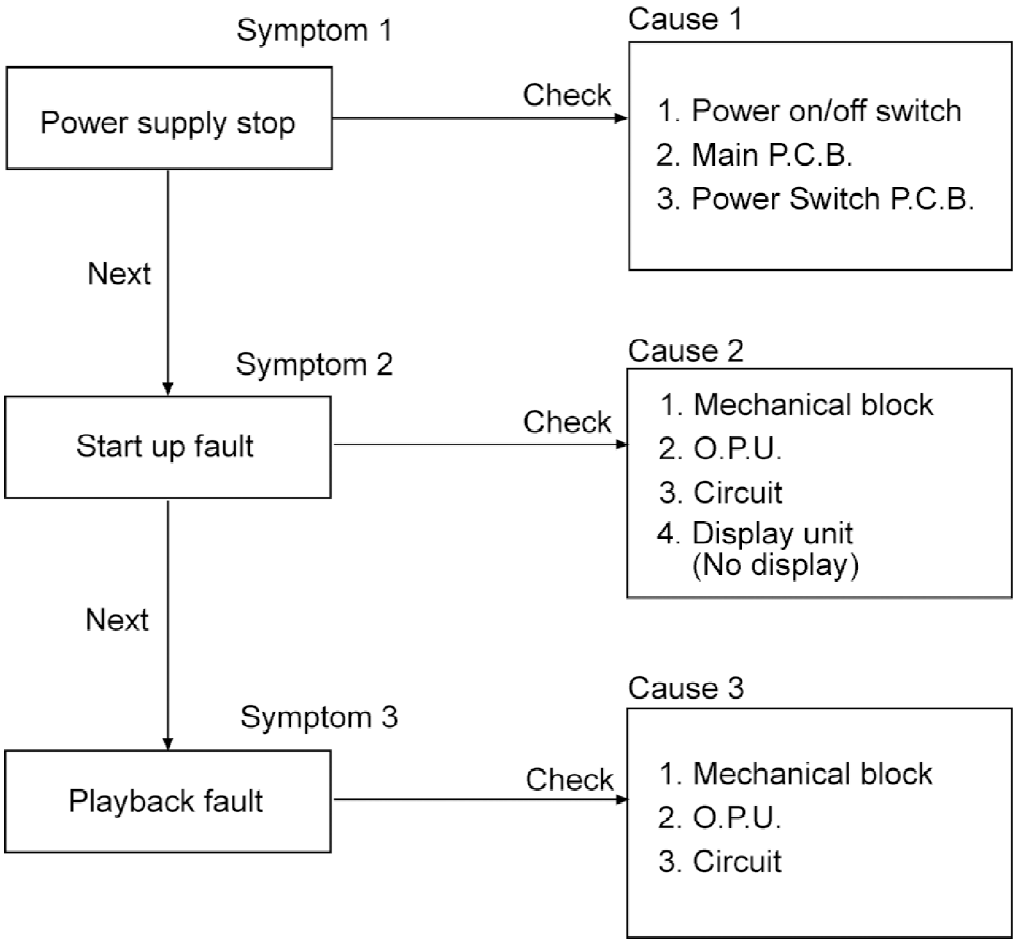
- **Menu: Classified for the navigation of the HighMAT digital contents. When menu selected, its submenu or the play list will be displayed.**
- **Play list: A list in which one or more digital contents are arranged in order**
- **Group: Sub-divided group of a play list.**
- **Digital Contents: Audio, still picture, and animation data.**

14. Procedure for repairing the set



14.1. Distinguish the trouble cause

• Check flow



How to distinguish the trouble

1. View mechanical part if visual damage occurred.
Confirm the movement of mechanical parts assembly (tray ass'y, loading mechanism ass'y, etc.).

2. Diagnose if Optical Pickup Unit is faulty (refer to diagnosis of Optical Pickup Unit).

3. If mechanism and OPU are OK, it is P.C.B.

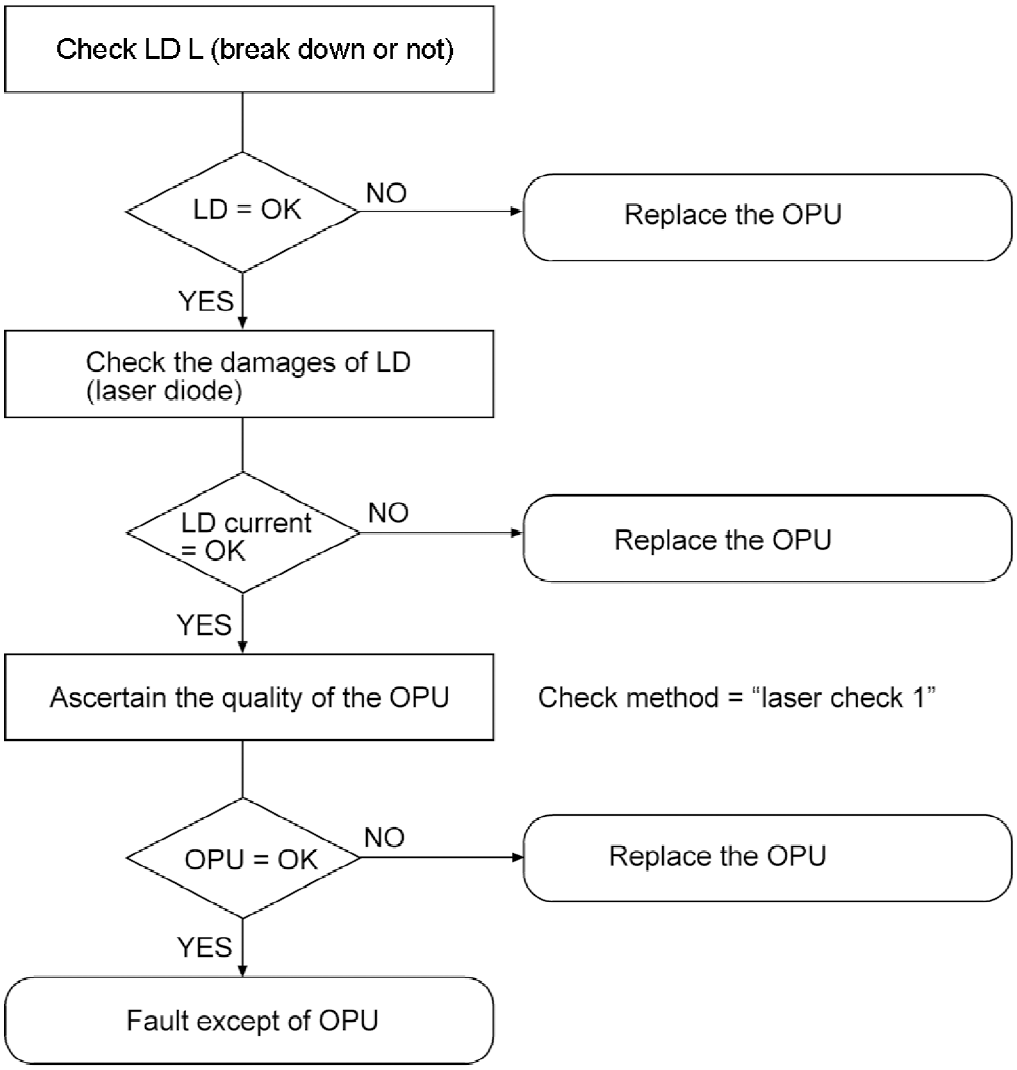
Cause 1	Possible fault
1. Power ON/OFF switch	Power switch, connector cable, AC inlet
2. Main P.C.B.	D1002, D1011, F1001, IC1021, L1001, Q1051, T1021
3. Power Switch P.C.B.	IC6001, X6001, IC6002, IC6011

Cause 2	Possible fault
1. Mechanical block	Tray and loading mechanical block, traverse unit
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	LD drive, servo (Traverse, Focus, Tracking) Disc sensor Signal processing (FORE, SODC, DV1 etc.)

Cause 3	Possible fault
1. Mechanical block	Traverse block (Tilt adjustment)
2. O.P.U.	Refer to the diagnosis of OPU
3. Circuit	Servo (Focus, tracking) Signal processing (FORE, SODC, DV1 etc.)

14.2. Diagnosis of Optical Pick-up Unit

Diagnosis Method
Diagnose the OPU by the following procedure



Note : When LD does not emit light after replacing the OPU, check the LD drive circuit in the module P.C.B.

How to distinguish Laser destruction/damage
Confirmation 1
Remove cover of mechanism block so that you will see the lens of optical pickup.
Confirm emission of laser at the moment when power switch is turned on.
If there is no laser emission, laser diode is faulty.
Confirmation 2
While holding "Pause" and "Open/Close" button, press "Display" button on the remote controller. Unit display laser current on FL.
From the reading of display, you can judge if laser diode is damaged or not.
Reading on the right side should be less than 70. If reading is more than 70, laser is damaged.

How to confirm if Optical Pickup is OK
Confirmation 1

1. **Confirmation of jitter value with test disc. (Refer below for how to check jitter)**
2. **Lens cleaning.**
3. **Reconfirm jitter value.**
4. **Perform tile adjustment. (Refer to tilt adjustment)**
5. **Reconfirm jitter value. (To confirm jitter value, while pressing "Pause" and "Open/Close" button, press numeric "5" on remote controller.)**
   Unit display jitter value on FL.

Confirmation 2
If servo is very unstable due to optical error and you cannot confirm jitter value, clean the lens and check appearance of pick up unit (cutting coil of actuator, etc), then check circuitry.

15. Disassembly and Main Component Replacement Procedures

"ATTENTION SERVICER"

Some chassis components may have sharp edges.
Be careful when disassembling and servicing.

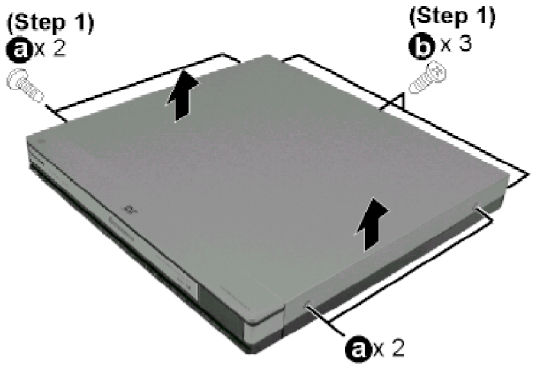
1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For assembly after operation checks or replacement, reverse the respective procedures.**
   Special reassembly procedures are described only when required.
3. **Select items from the following index when checks or replacement are required.**

Contents

- Removal of the Rotary Tray
- Removal of the Open Lock Gear
- Removal of the Close Lock Gear
- Removal of the Tray Motor P.C.B. and Sensor P.C.B.
- Removal of the CD Traverse Unit
- Removal of the Pulley Gear
- Removal of the Loading Motor P.C.B.
- Removal of the Drive Gear (A) & (B)
- Disassembling the Fixed Plate, Magnet and Clamper
- Removal of the Cam Gear & Support Piece
- Removal of the Slide Plate (L) & (R) and Change Lever
- Assembly of Tray Base

15.1. Disassembling the Top Cabinet

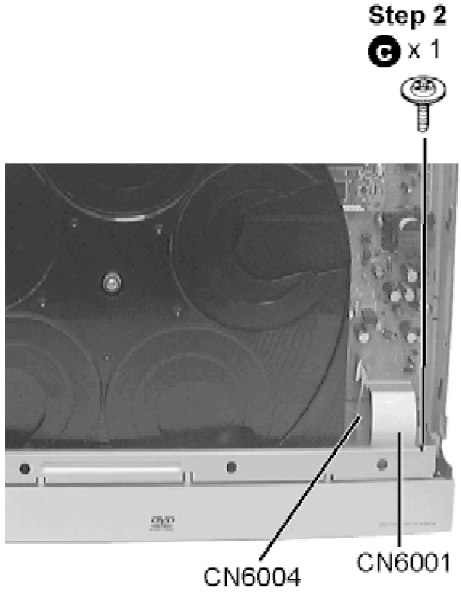
Step 1 Remove 7 screws.
Step 2 Remove the top cabinet in the direction of arrow.



15.2. Disassembling the Front Panel

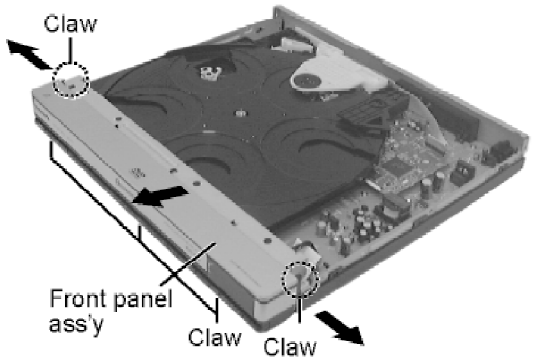
- Follow the (Step 1) - (Step 2) of Item 15.1.

Step 1 Pull out the FFC from connectors (CN6004 & CN6001).
Step 2 Remove 1 screw.

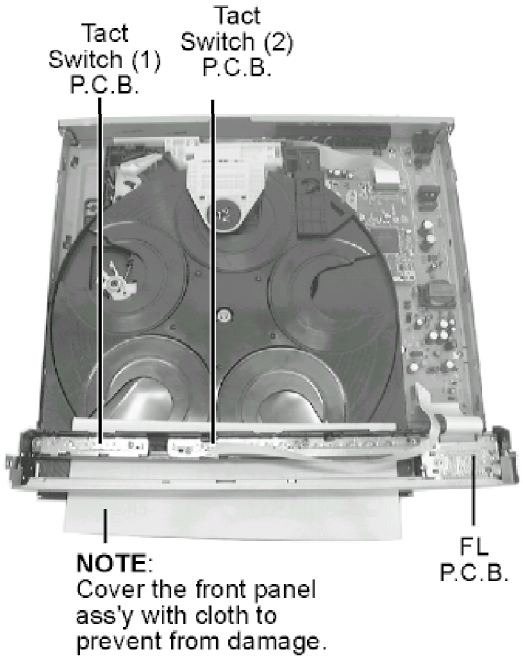


Step 3 Pull the front panel ass'y in both direction of arrow to unlock the claws of the chassis ass'y.

Step 4 Remove the front panel ass'y in the direction of arrow.



- Checking of Tact Switch (1) P.C.B., Tact Switch (2) P.C.B. and FL P.C.B.

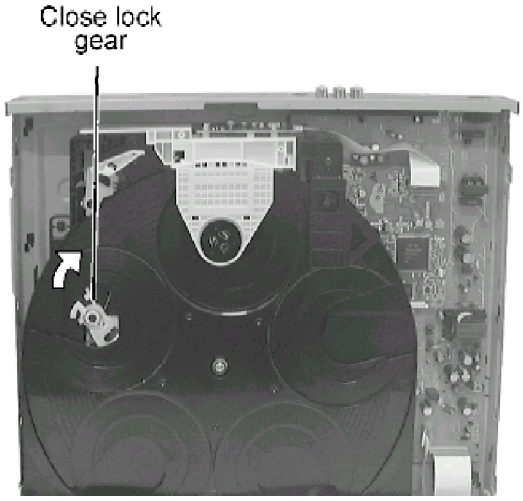


15.3. Disassembling the Tray Assembly

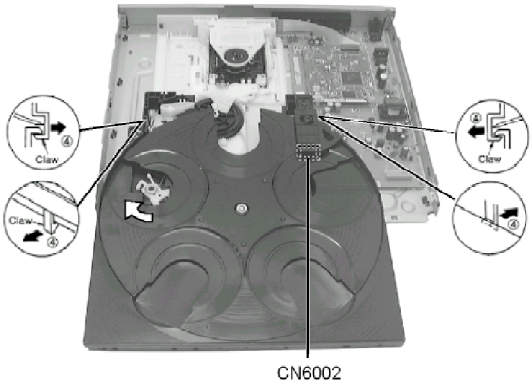
- Follow the (Step 1) - (Step 2) of Item 15.1.

- Follow the (Step 1) - (Step 4) of Item 15.2.

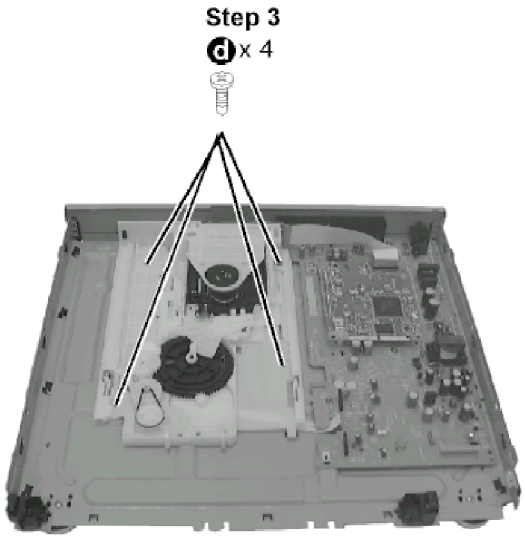
Step 1 Keep the close lock gear pressed in clockwise, move the tray assembly in the direction of the arrow.



Step 2 Hold close lock gear, push and release the 4 claws in the direction of arrow, and then remove the tray assembly.

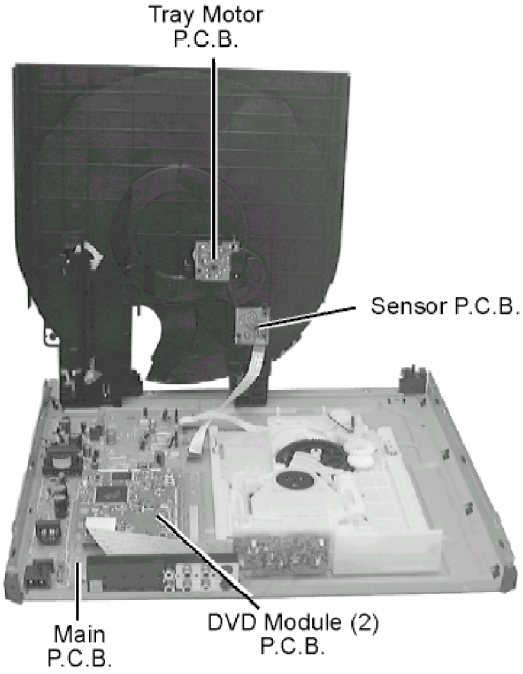


Step 3 Pull out FFC CN6002.



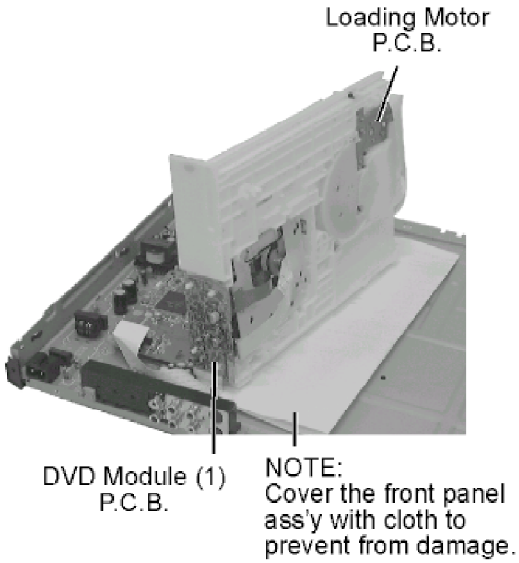
Step 4 Remove 4 screws.

- Checking of Main P.C.B., Tray Motor, DVD Module (2) P.C.B. and Sensor P.C.B.



- Checking of Loading Motor P.C.B. and DVD Module (1) P.C.B.

Step 5 Upset base assembly in vertical position.

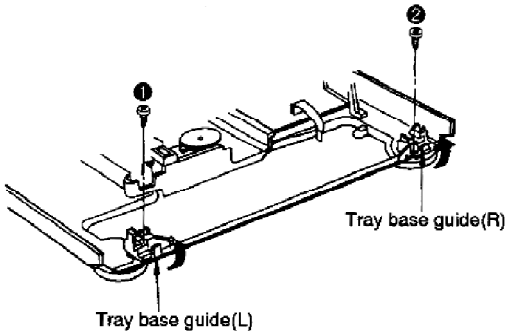


15.4. Removal of the Tray Base Guide (L) and Tray Base Guide (R)

- Follow the (Step 1) - (Step 2) of Item 15.1.

- Follow the (Step 1) - (Step 4) of Item 15.2.

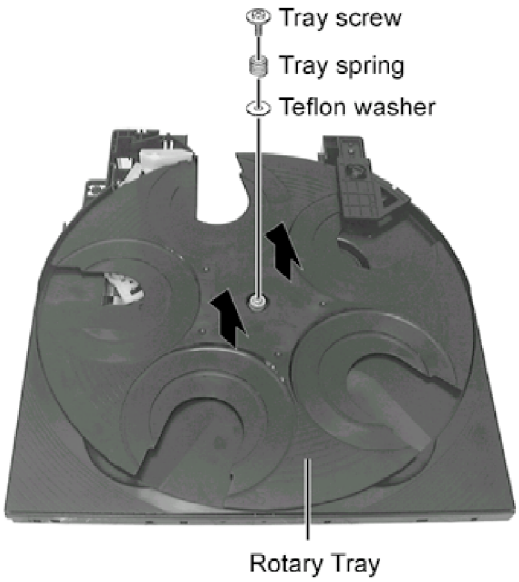
- Follow the (Step 1) - (Step 5) of Item 15.3.



Step 1 Remove the 2 screws.
Step 2 Remove the tray base guide (L) and tray guide (R) in the direction of arrow.

15.5. Removal of the Rotary Tray

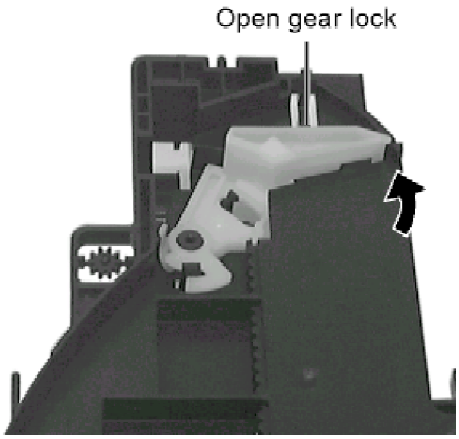
- Follow the (Step 1) - (Step 2) of Item 15.1.
- Follow the (Step 1) - (Step 4) of Item 15.2.
- Follow the (Step 1) - (Step 5) of Item 15.3.



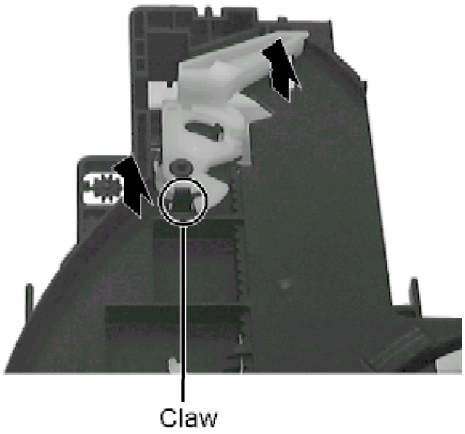
Step 1 Remove tray screw, tray spring and teflon washer.
Step 2 Remove rotary tray.

15.6. Removal of the Open Lock Gear

- Follow the (Step 1) - (Step 2) of Item 15.1.
- Follow the (Step 1) - (Step 4) of Item 15.2.
- Follow the (Step 1) - (Step 5) of Item 15.3.
- Follow the (Step 1) - (Step 2) of Item 15.5.



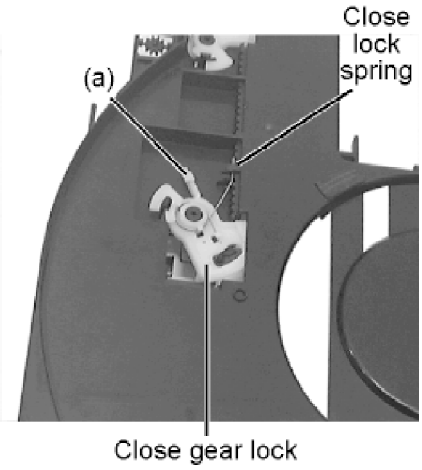
Step 1 Rotate open lock gear in the direction of arrow. (Anti-clockwise)



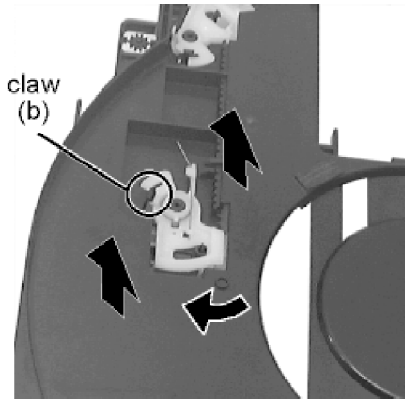
Step 2 Release claw of open lock gear, remove open lock gear in the direction of arrow .

15.7. Removal of the Close Lock Gear

- Follow the (Step 1) - (Step 2) of Item 15.1.
- Follow the (Step 1) - (Step 4) of Item 15.2.
- Follow the (Step 1) - (Step 5) of Item 15.3.
- Follow the (Step 1) - (Step 2) of Item 15.5.



Step 1 Hook close lock spring to claw (a).



Step 2 Rotate close lock gear to direction of arrow, press claw (b) and pull out close lock gear.

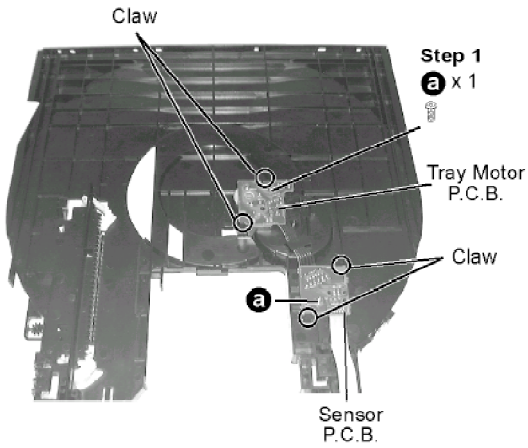
15.8. Removal of the Tray Motor P.C.B. and Sensor P.C.B.

- Follow the (Step 1) - (Step 2) of Item 15.1.

- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Remove 2 screws.



Step 2 Release 4 claws at Tray Motor P.C.B. and Sensor P.C.B..

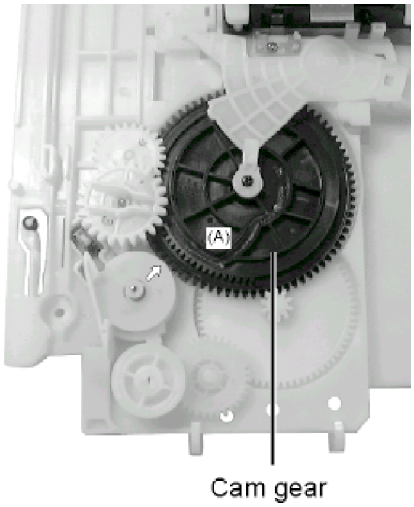
15.9. Removal of the CD Traverse Unit

- Follow the (Step 1) - (Step 2) of Item 15.1.

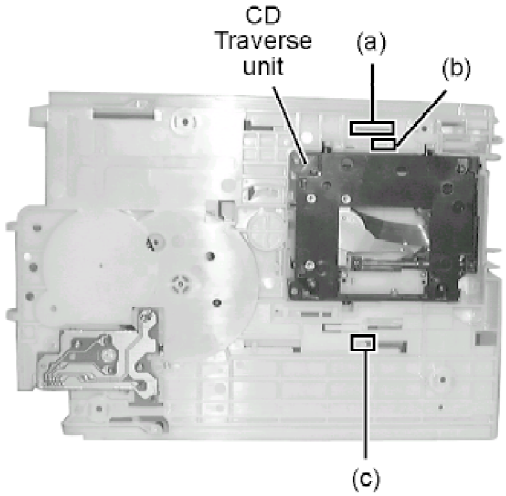
- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Rotate cam gear anti-clockwise. (Align at position (B) as marking on gear with arrow)



Step 2 Flip the base mech unit in vertical position.



Step 3 Press upward (a), push backward (b) and press to left (c) to release CD traverse unit.

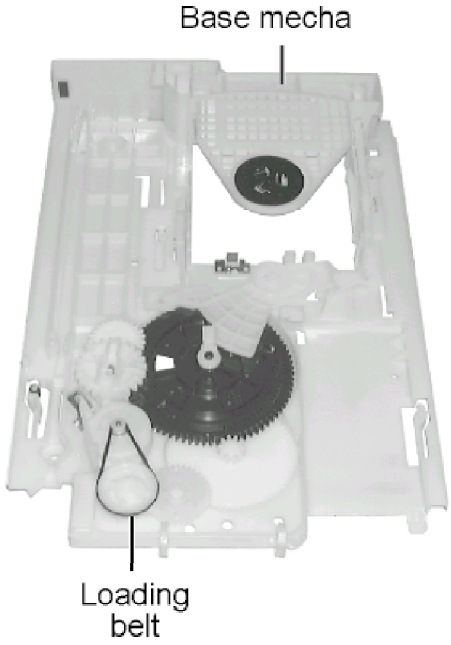
15.10. Removal of the Pulley Gear

- Follow the (Step 1) - (Step 2) of Item 15.1.

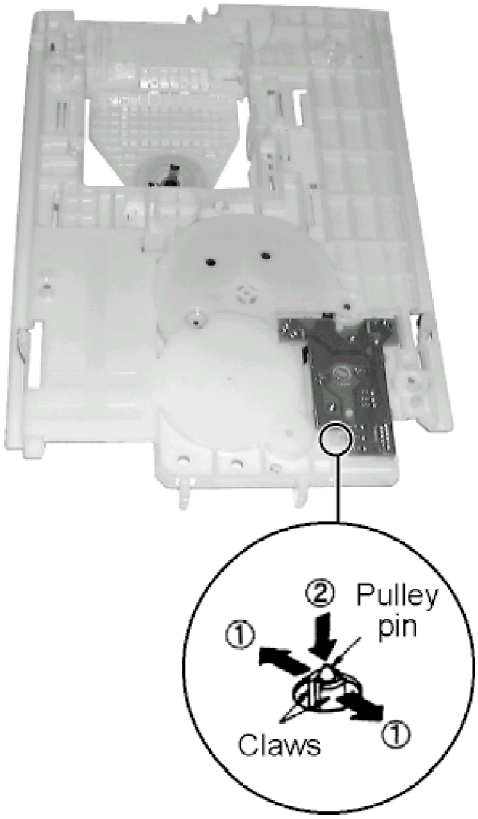
- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Remove of the loading belt.



Step 2 Flip the base mecha.



Step 3 Release the 2 claws in the direction of arrow (1), and then push the pulley pin in the direction of arrow (2).

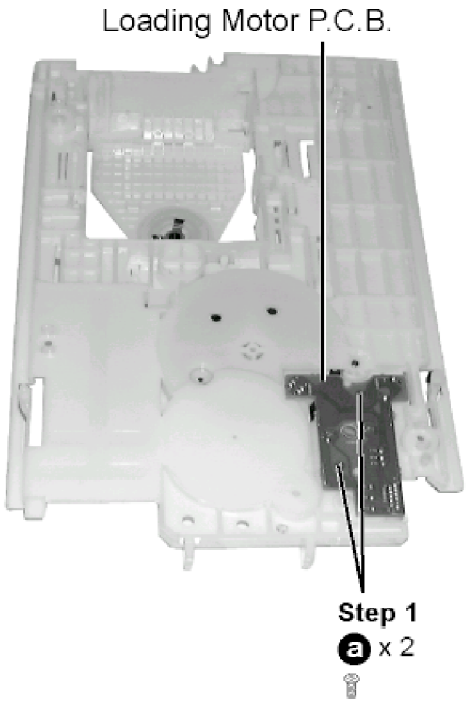
15.11. Removal of the Loading Motor P.C.B.

- Follow the (Step 1) - (Step 2) of Item 15.1.

- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Remove 2 screws.



Step 2 Remove Loading Motor P.C.B.

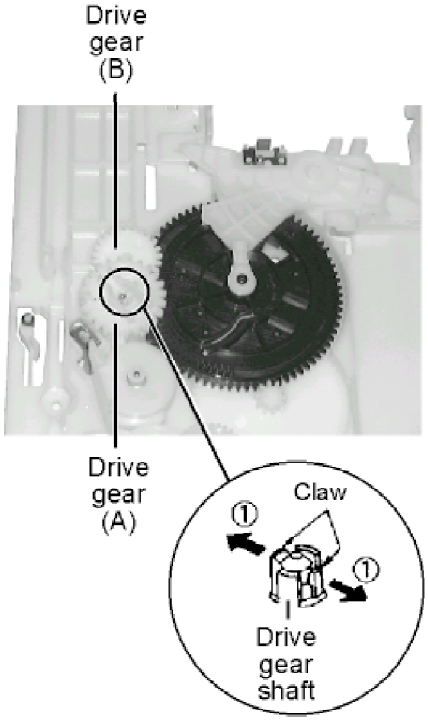
15.12. Removal of the Drive Gear (A) & (B)

- Follow the (Step 1) - (Step 2) of Item 15.1.

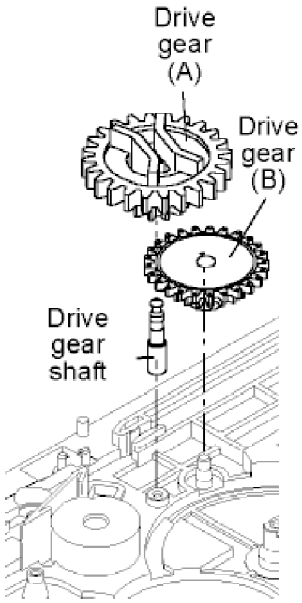
- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Release the claw in the direction of arrow (1), and then push drive gear shaft up.



Step 2 Remove Drive Gear (A) and Drive Gear (B).



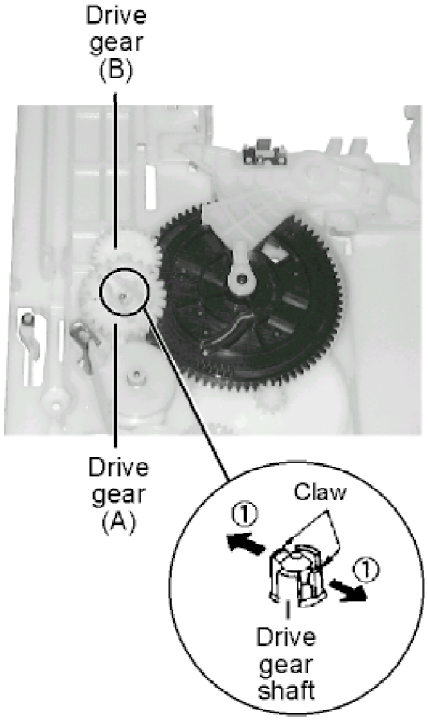
15.13. Removal of the Drive Gear (A) & (B)

- Follow the (Step 1) - (Step 2) of Item 15.1.

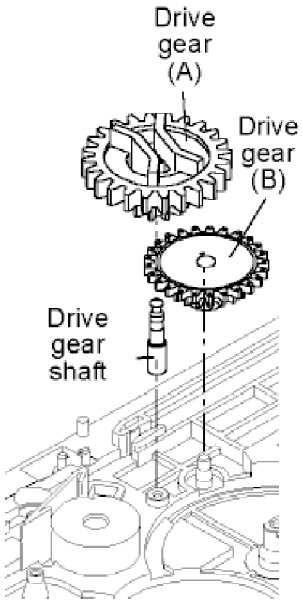
- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Release the claw in the direction of arrow (1), and then push drive gear shaft up.



Step 2 Remove Drive Gear (A) and Drive Gear (B).



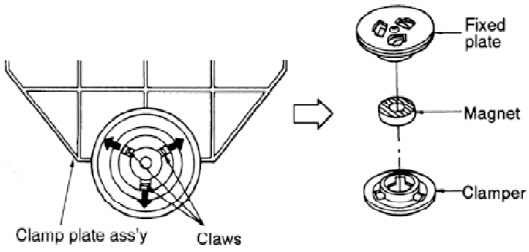
15.14. Disassembling the Fixed Plate, Magnet and Clamper

- Follow the (Step 1) - (Step 2) of Item 15.1.

- Follow the (Step 1) - (Step 4) of Item 15.2.

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Release 3 claws in the direction of arrow.

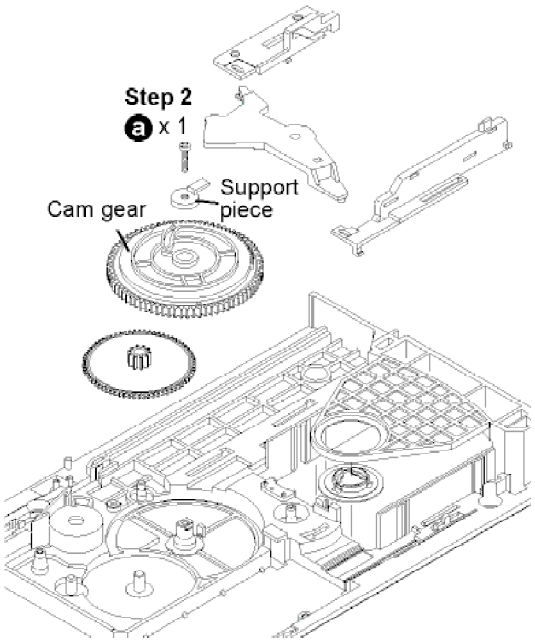


15.15. Removal of the Cam Gear & Support Piece

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Rotate (A) in cam gear anti-clockwise.

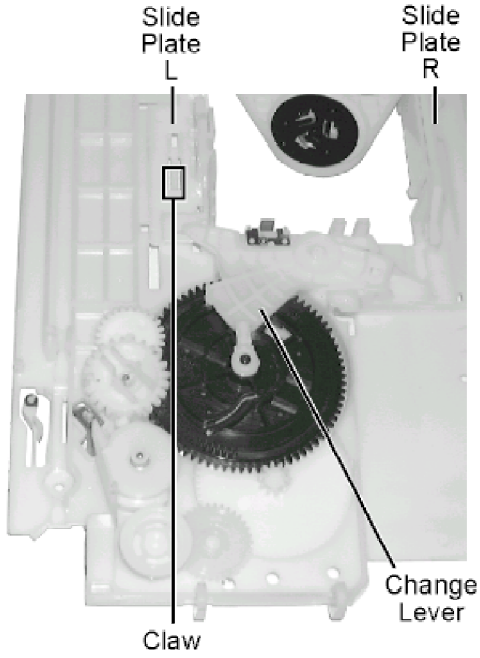
Step 2 Remove 1 screw and support piece.



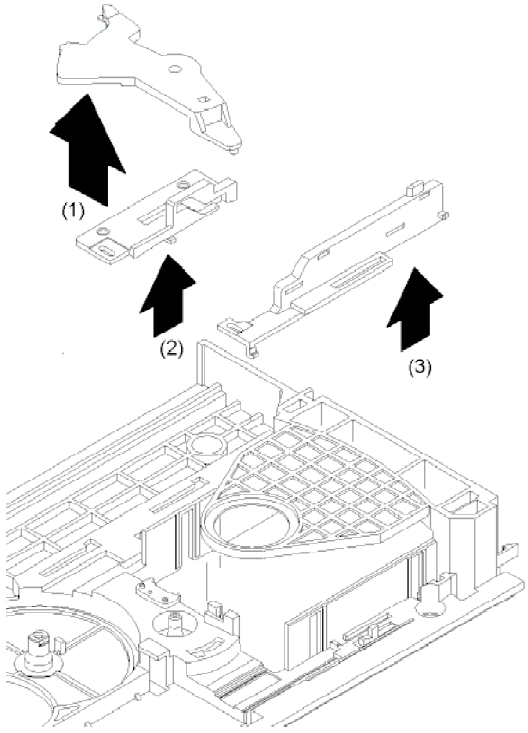
15.16. Removal of the Slide Plate (L) & (R) and Change Lever

- Follow the (Step 1) - (Step 5) of Item 15.3.

Step 1 Press the claw and push the Slide Plate (L) up.

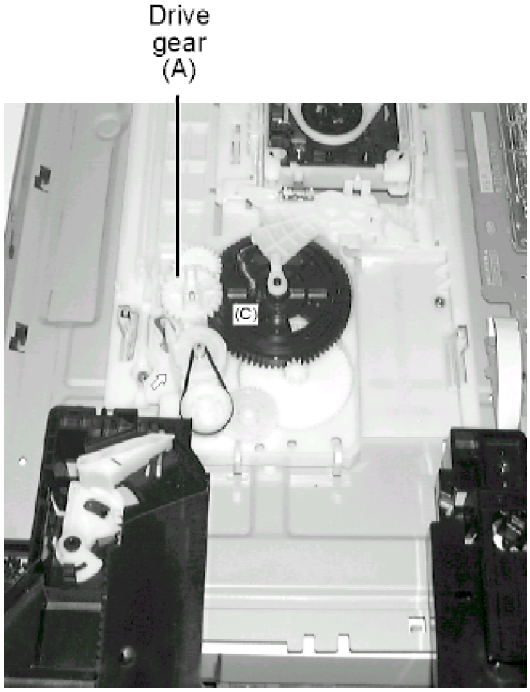


Step 2 Remove slide plate (L) & (R) and change lever as arrow shown.

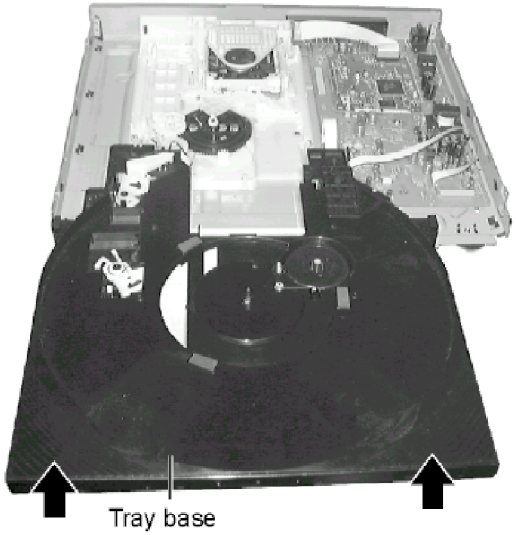


15.17. Assembly of Tray Base

Step 1 Rotate cam gear anti-clockwise. Align at position (C) as marking on gear with arrow.



Step 2 Make sure drive gear (A) at vertical position.



Step 3 Push tray base to the direction of arrow shown.

16. Adjustment Procedure

16.1. Required Tools and Equipment

16.1.1. Usage Equipment

Purpose of Use	Tools/Equipment	Model/Product Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hexagonal wrench`	Available on the market (2mm)
Others	Screw lock	RZZ0L01
	Grease	RFKXGAK152, RFKXPG641
Checking	CD test disc	PVCD-K06 and any commercially available disc
	VCD test disc	
	Recovery disc	RFKZD03R004

16.1.2. Necessity of Adjustment

16.1.2.1. Necessity of Optical Adjustment

- Before starting optical system adjustment, be sure to wear proper protection gear against static electricity.
- Optical adjustment (optical pickup tilt adjustment) is required after following parts are replaced:
  1. Optical pickup
  2. Spindle motor assembly
  3. Optical pickup peripherals such as a rail, etc.

Note:
Optical adjustment is not necessary after replacement of other parts inside traverse, however, may require when picture deterioration is detected. Optical adjustment cannot be applied to the inside of optical pickup. When a traverse unit is replaced, the adjustment is not necessary.

16.1.3. Storing and Handling Test Discs

Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

- Do not leave the discs uncovered on the work desk or other places after use.
- Handle the discs carefully to prevent scratches. Put each disc in its case and place it in the standing position. Store the discs in a cool place and avoid direct sunlight or air conditioner.
- Accurate adjustment cannot be expected with a disc warped against a flat surface. Obtain a new test disc for optical adjustment.
- If a warped disc is used, adjustment would result incorrectly, and other discs could not be used.

16.1.4. Optical Adjustment (Optical Pickup Tilt Adjustment)

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw / Tilt adjustment screw	T1 (inner track) replay / T43 (outer track) replay	DVDT-S15 or DVD
Measuring equipment		Adjustment value	
None (LCD display of the player is used.)		Adjust that jitter value becomes minimum.	

16.1.4.1. Adjustment Procedure

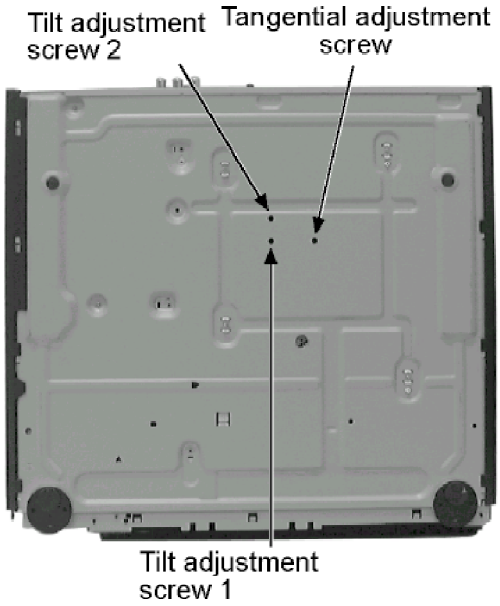
1. While the player is stopped and no disc is inserted, select the DVD function. Press and hold down the ■ button on the player and the number button, “5” on the remote controller unit.
2. Check that “J_xxx_yyy_zz” is appearing on the display.

For your information:
The values, “yyy” and “zz” are not associated to jitter value. / “yyy” indicates the frequency of error occurrence. / “zz” indicates the focus drive value.

Note:
Jitter value appears on the display.

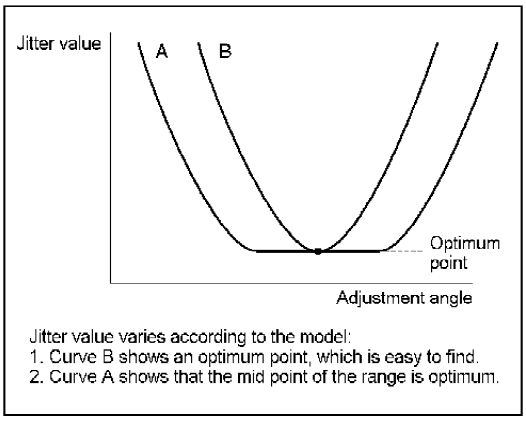
3. Replay T01 (inner track) of the test disc.
4. Adjust till the jitter value becomes minimum, using a tangential adjustment screw. <Fig. 16-1>
5. Replay T43 (outer track) of the test disc.
6. Adjust till the jitter value becomes minimum, using a tilt adjustment screw 1. <Fig. 16-1>
7. Replay T43 (outer track) of the test disc.
8. Adjust till the jitter value becomes minimum, using a tilt adjustment screw 2.<Fig. 16-1>
9. Adjust till the jitter value becomes, using the tilt adjustment screws 1 and 2 alternatively.

Fig. 16-1



16.1.4.2. Tips

1. **Apply the tangential adjustment first and then the tilt adjustment.**
2. **Repeat the adjustment a couple of times to find the optimum point.**
3. **Complete with the tilt adjustment.**



16.1.4.3. Check After Adjustment

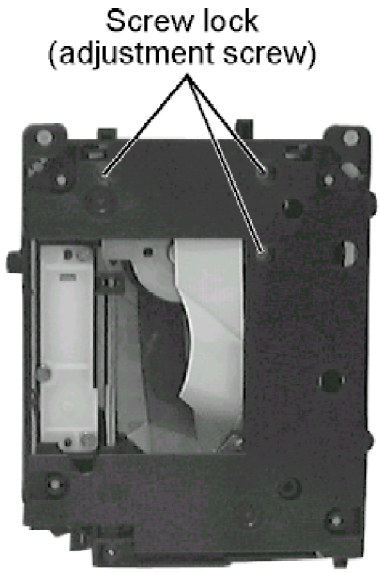
Replay test discs or other commercial discs in order to confirm that no picture deterioration or sound skipping is detected in the inner, middle, and outer tracks. After this, fasten each adjustment screw securely using a screw lock.

16.1.4.4. Procedure for Screw Lock

1. **After adjustment, remove the top cover, clamper base, disc tray and then traverse unit.**
2. **Place the traverse unit upside down, and fasten the adjustment screws with a screw lock. <Fig. 16-2>**
3. **After fastening the screws, assemble in order of the traverse unit,**

disc tray, clamper base, and then top cover.

Fig. 16-2



17. Illustration of IC's, Transistors and Diodes

18. Terminal Function of IC

18.1. IC6001 (MN101C35DCY) System Microprocessor

Pin No.	Mark	I/O	Function
1	CMD	O	Serial output
2	STAT	I	Serial input
3	DSPCLK	I	Serial clock
4	P03/0: YCH	-	Not used
5	P04/0: IPSEL	-	Not used
6	P05/ RGBH	-	Not used
7	P06	-	Not used
8	VDD	I	5V
9	OSC2	O	Oscillator CLK O/P
10	OSC1	I	Oscillator CLK I/P
11	VSS	I	GND
12	XI	I	Not used
13	XO	O	Not used
14	MMOD	I	Not used
15	VREF-	I	Not used

Pin No.	Mark	I/O	Function
16	PA0/ KEYIN0	I	A/D key input
17	PA1/ KEYIN1	I	A/D key input
18	PA2/ KEYIN2	I	A/D key input
19	PA3	I	Port
20	PA4/ DICSSNS	I	Port
21	PA5	I	Port
22	PA6	I	Port
23	PA7	I	Port
24	VREF	I	A/D reference H
25	P07	O	Mecha control
26	/RST	I	Reset
27	P10	-	Not used
28	P11	-	Not used
29	P12/0: PWM	O	Mecha control
30	P13/0:P-OFF(L)	O	Power OFF
31	P14/0: POWER-MUTE	O	Power mute
32	P15/0: WIDE-1	O	
33	IRQ0 (REMOCON)	I	Remote controller input
34	P21/I: CAM-SENSOR	I	Disc_sensor input
35	P22 P22/I: OPEN-SWITCH	I	Tray open input
36	P23/I: POSITION	I	Mecha position control
37	P24/: PULSE-SENSOR	I	Pulse sensor input
38	P25	I	Not used
39	P30/O: OFFMUTE	-	Not used

Pin No.	Mark	I/O	Function
40	P31/O: 01CHMUTE	I/O	Mute
41	P32/O: 0.1CH	I/O	Not used
42	O:STDBY -LED	O	LED CONTROL O/P
43	P51/O: A.SRD-LED	O	LED CONTROL O/P
44	P52/O: REMASTER -LED	O	LED CONTROL O/P
45	P53/O: SEQ-LED	O	LED CONTROL O/P
46	P54/O: AONLY-LED	O	LED CONTROL O/P
47-63	DGT17-DGT1	O	FL-DGT
64-99	SEG7-SEG42	O	FL-SEGMENT DISPLAY
100	VPP	I	FL-23V SUPPLY INPUT

19. Block Diagram

20. Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

S6401

: Stop switch

S6402

: Pause switch

S6403

: Play switch

S6404

: Disc Exchange switch

S6405

: Disc Skip switch

S6406

: Rew Skip switch

S6407

: Forward Skip switch

S6408

: Open/ Close switch

S6409

: Power switch

S6410

: Remaster switch

S6411

: Sequential switch

S9001

: Loading switch

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

- Importance safety notice :

Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.

- Put a conductive mat on the work table.

- Ground the soldering iron.

- Do not touch the pins of IC, LSI or VLSI with fingers directly.

CAUTION: TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

21. Printed Circuit Board

22. Wiring Connection Diagram

23. Parts Location and Replacement Parts List

Notes:

- Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
Parts without these indications can be used for all areas.

- Warning: This product uses a laser diode. Refer to caution statements on "Precaution of Laser Diode".

- Capacitor values are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.

- Resistance values are in ohms, unless specified otherwise, 1K= 1,000 (OHM).

- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific

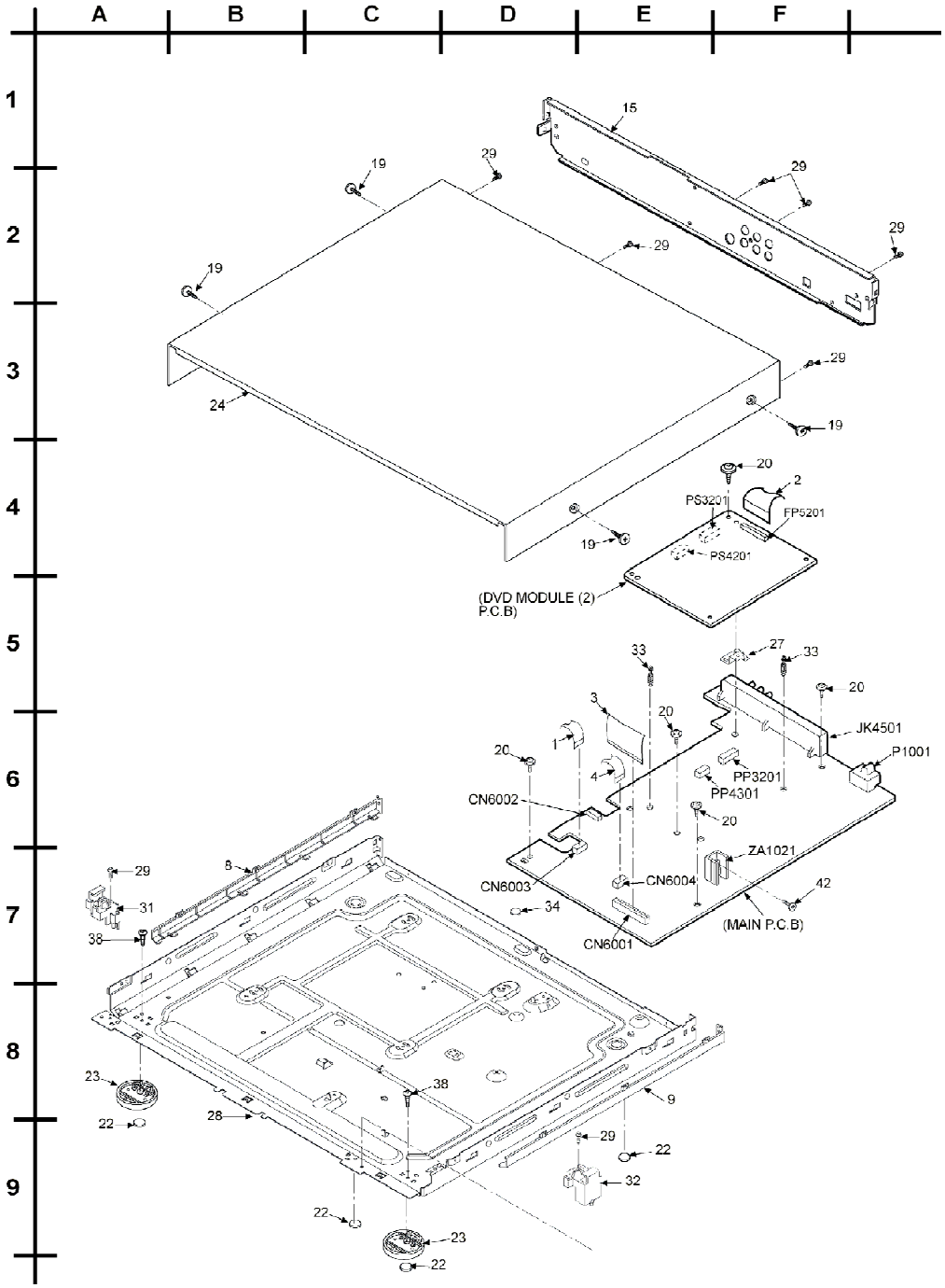
period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

- **[M] Indicates in the Remarks columns indicates parts supplied by PAVCSG.**
- **The “(SF)” mark denotes the standard part.**
- **Reference for O/I book languages are as follows:**

Ar :	**Arabic**	**Du :**	**Dutch**	**It :**	**Italian**	**Sp :**	**Spanish**
Cf :	**Canadian French**	**En :**	**English**	**Ko :**	**Korean**	**Sw :**	**Swedish**
Cz :	**Czech**	**Fr :**	**French**	**Po :**	**Polish**	**Co :**	**Traditio Chinese**
Da :	**Danish**	**Ge :**	**German**	**Ru :**	**Russian**	**Cn :**	**Simplifi Chinese**

23.1. Loading Mechanism, Traverse Unit and Cabinet

23.1.1. Loading Mechanism, Traverse Unit and Cabinet Parts Location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PS3201
FP5201
PS4201
(DVD MODULE (2) P.C.B)
27
33
3
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4
JK4501
P1001
PP3201
PP4301
CN6002
CN6003
CN6004
CN6001
ZA1021
42
(MAIN P.C.B)
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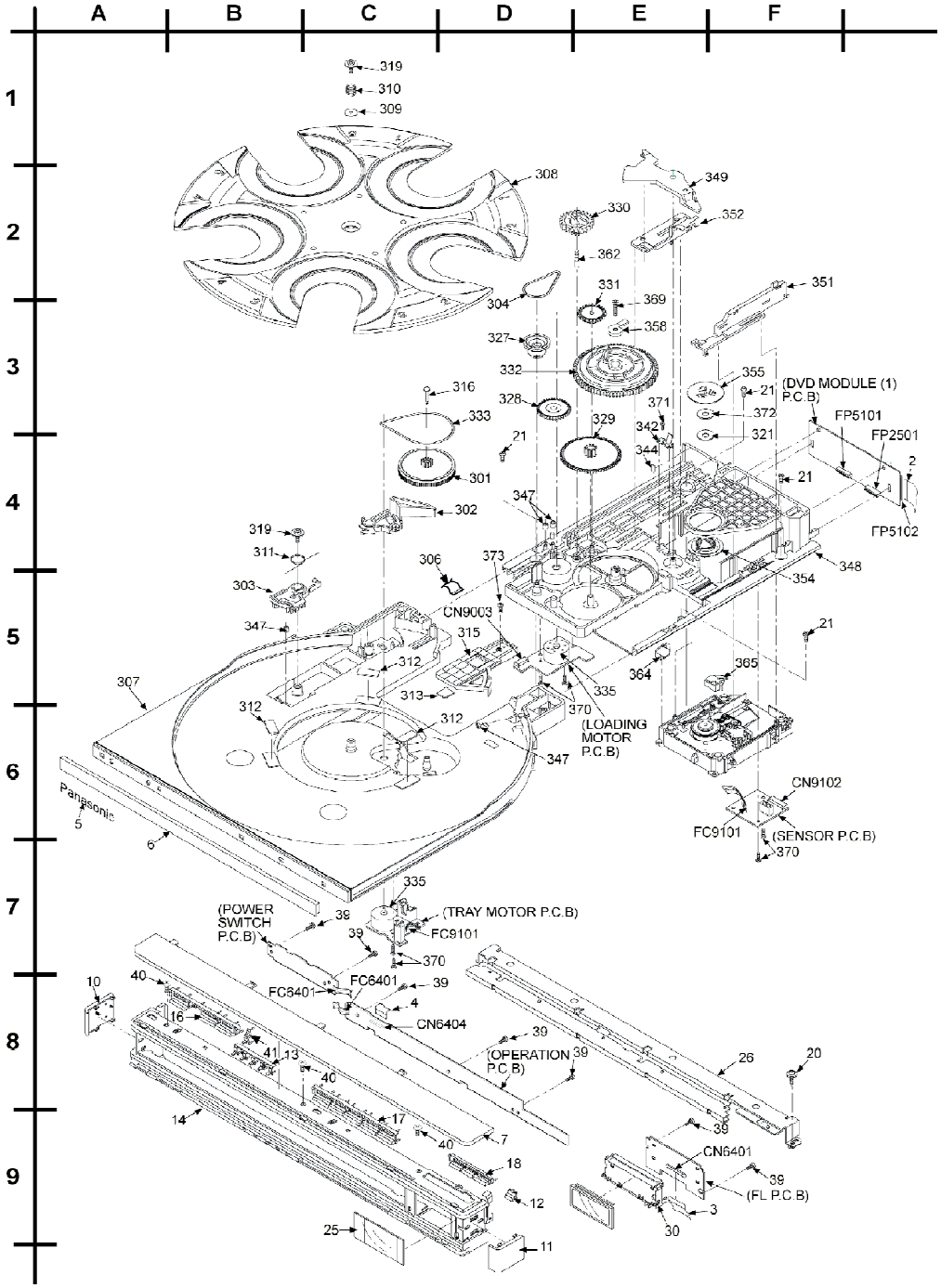
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(DVD MODULE (1) P.C.B)
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FP5101
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FP2501
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347
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FP5102
319
311
306
373
348
303
354
CN9003
347
315
21
312
364
365
307
313
335
370
312
312
(LOADING MOTOR P.C.B)
347
CN9102
Panasonic
5
6
FC9101
(SENSOR P.C.B)
370
335
(POWER SWITCH P.C.B)
38
(TRAY MOTOR P.C.B)
39
FC9101
370
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40
FC6401
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FC6401
4
16
CN6404
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13
(OPERATION P.C.B)
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CN6401
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(FL P.C.B)
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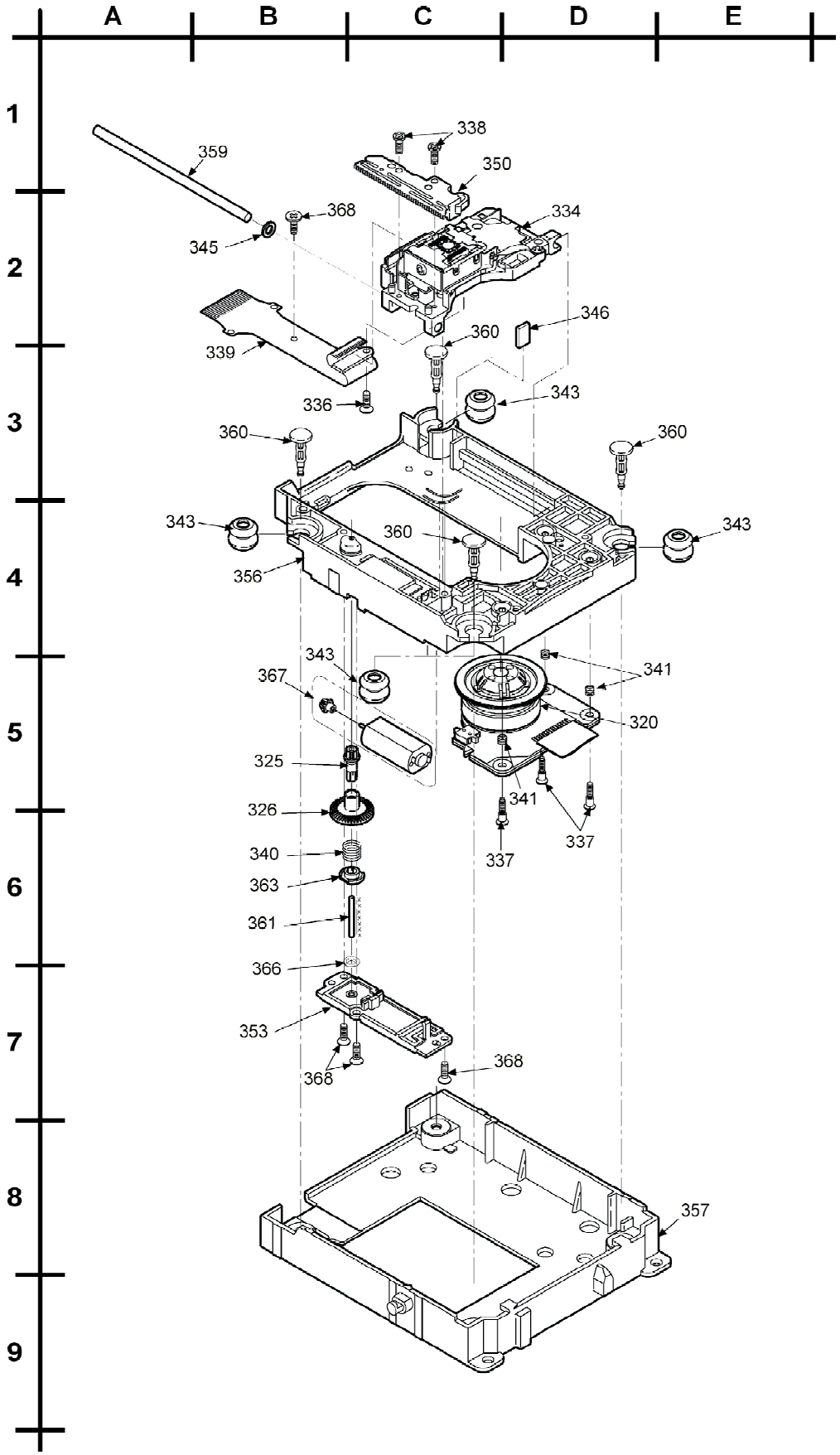
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23.1.2. Loading Mechanism, Traverse Unit and Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	REZ1483	11P FFC	[M]
2	REZ1485	50P FFC (BE-DRIVE)	[M]
3	REZ1513	32P FFC	[M]
4	REZ1577	FFC WIRE	[M]
5	RGBX0011-S	PANA BADGE	[M]
6	RGK1578E-S	TRAY ORNAMENT	[M]
7	RGK1579-S	TOP ORNAMENT	[M]
8	RGK1580-K	SIDE PLATE L	[M]
9	RGK1581-K	SIDE PLATE R	[M]
10	RGK1582-S	SIDE ORNAMENT L	[M]
11	RGK1583-S	SIDE ORNAMENT (R)	[M]
12	RGL0607-Q	SENSOR PIECE	[M]
13	RGL0625-Q	5 DISC INDICATOR	[M]
14	RGP0964A-K1	FRONT PANEL	[M]
15	RGR0331A-D	REAR PANEL	[M]GN
15	RGR0331A-E	REAR PANEL	[M]GCS
16	RGU2153B-K	POWER BUTTON	[M]
17	RGU2154-K	PLAY BUTTON	[M]
18	RGU2155-K	DISC BUTTON	[M]
19	RHD30007-S	SCREW	[M]
20	RHD30090	SCREW	[M]
21	RHD30107	SCREW	[M]
22	RKA0145-K	CUSHION	[M]
23	RKAX0009-A	FOOT BASE ASS'Y	[M]
24	RKM0474-S	TOP CABINET	[M]
25	RKW0701-K	FL WINDOW	[M]
26	RMA1615	PANEL ANGLE	[M]
27	RMA1616	BE ANGLE A	[M]
28	RMK0549	BOTTOM CHASSIS	[M]
29	XTBS3+8JFZ1	SCREW	[M]
30	RMN0729	FL HOLDER	[M]
31	RMN0730	TRAY GUIDE L	[M]
32	RMN0731	TRAY GUIDE R	[M]
33	RMR1440-X	PCB SUPPORT	[M]
34	RMZ0685	SPACER SHEET	[M]
38	XTB3+6J	SCREW	[M]
39	XTBS26+8J	SCREW	[M]
40	XTS3+6FFZ	SCREW	[M]
41	RGL0606-Q	PANEL LIGHT	[M]
42	XYN3+F8	SCREW	[M]
		TRAVERSE DECK	
301	RDG0567	PULSE GEAR	[M]
302	RDG0568	OPEN LOCK GEAR	[M]
303	RDG0569	CLOSE LOCK GEAR	[M]
304	RDV0073	TRAY BELT	[M]
306	REZ1484	11P FFC (TRAY-MAIN)	[M]
307	RGQ0358-K	TRAY BASE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
308	RGQ0359-K	ROTARY TRAY	[M]
309	RHW81001-1	WASHER	[M]
310	RMB0365	TRAY SPRING	[M]
311	RME0384	CLOSE LOCK G/SPRING	[M]
312	RMF0182	TRAY FELT	[M]
313	RMF0324	BLOCK SHEET	[M]
315	RMM0256	BLOCK BASE	[M]
316	RMS0123-1	FIXED PIN B	[M]
319	XTWS3+10S	SCREW	[M]
320	BML3E4CRX	SPINDLE MOTOR	[M]
321	JSM0048	MAGNET	[M]
325	RDG0557	PINON SHAFT	[M]
326	RDG0558	BEVEL RING	[M]
327	RDG0562	PULLEY GEAR	[M]
328	RDG0563	RELAY GEAR A	[M]
329	RDG0564	RELAY GEAR B	[M]
330	RDG0565	DRIVE GEAR A	[M]
331	RDG0566	DRIVE GEAR B	[M]
332	RDG0570	CAM GEAR	[M]
333	RDV0072	LOADING BELT	[M]
334	RAF3023A-2S	OPU	[M]
335	REM0112	LOADING MOTOR ASS'Y	[M]
336	RHD14095	FPC SCREW	[M]
337	RHD17042	TILT ADJUST SCREW	[M]
338	RHD17046	RACK SPRING	[M]
339	RJB2621A	RELAY FPC	[M]
340	RMB0713-1	THRUST SPRING	[M]
341	RMB0714	TILT SPRING	[M]
342	RMC0387	SUPPORT SPRING	[M]
343	RMG0598-A	FLOATING RUBBER	[M]
344	RMG0615-K	CUSHION SHEET	[M]
345	RMG0617-H	CUSHION RUBBER A	[M]
346	RMG0618-H	CUSHION RUBBER B	[M]
347	RMG0620-K	CUSHION RUBBER	[M]
348	RMK0555	MECHA BASE	[M]
349	RML0646	CHANGE LEVER	[M]
350	RMM0252	OPU DRIVE RACK	[M]
351	RMM0254	SLIDE PLATE R	[M]
352	RMM0255	SLIDE PLATE L	[M]
353	RMQ1112	MOTOR COVER	[M]
354	RMR1446-X	CLAMPER	[M]
355	RMR1447-X	MAGNET HOLDER	[M]
356	RMR1466-K	TRAVERSE BASE	[M]
357	RMR1467-K	MIDDLE CHASSIS	[M]
358	RMR1507-X	SUPPORT PIECE	[M]
359	RMS0788	GUIDE SHAFT	[M]
360	RMS0789	FIXED PIN	[M]
361	RMS0798	GEAR SHAFT	[M]
362	RMS0802	DRIVE GEAR SHAFT	[M]
363	RMX0233	THRUST WASHER	[M]
364	RMX0241	TRAY SUPPORT R	[M]
365	RMX0242	TRAY SUPPORT L	[M]
366	RMX0247	WASHER	[M]
367	RXQ0946	TRV MOTOR SUB ASS'Y	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
368	VHD1224	ADJ SPRING HOLDER	[M]
369	XTN26+14JFZ	SCREW	[M]
370	XTN26+8G	SCREW	[M]
371	XTV2+6G	SCREW	[M]
372	XWG6FFY	WASHER	[M]
373	XTB3+10J	SCREW	[M]

23.2. Component Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REP3451A-N	DVD MODULE (1) P.C.B.(SIDE:A)	[M](RTL)
	REP3451A-N	DVD MODULE (1) P.C.B.(SIDE:B)	[M](RTL)
	REP3500C	DVD MODULE (2) P.C.B.(SIDE:A)	[M](RTL)
	REP3500C	DVD MODULE (2) P.C.B.(SIDE:B)	[M](RTL)
	REP3548C	MAIN P.C.B.	[M](RTL)
	REP3548C	OPERATION P.C.B.	[M](RTL)GCS
	REP3548B	OPERATION P.C.B.	[M](RTL)GN
	REP3478A	FL P.C.B.	[M](RTL)
	REP3548C	POWER SWITCH P.C.B.	[M](RTL)GCS
	REP3548B	POWER SWITCH P.C.B.	[M](RTL)GN
	REP3465A	LOADING MOTOR P.C.B.	[M](RTL)
	REP3466A	TRAY MOTOR P.C.B.	[M](RTL)
	REP3466A	SENSOR P.C.B.	[M](RTL)
		INTEGRATED CIRCUITS	
IC1101	C0DAEMZ00001	IC VOLTAGE REGULATOR	[M]
IC1151	PQ09DZ1U	IC REGULATOR	[M]
IC1155	PQ09DZ1U	IC REGULATOR	[M]
IC2501	C0GBF0000004	IC MOTOR DRIVE	[M]
IC2521	C0GBG0000033	IC MOTOR DRIVE	[M]
IC3001	MN2DS0002AP1	IC DV 1.3 LSI	[M]
IC3051	C3ABPG000068	IC 64 SDRAM	[M]
IC3061	C3ABPG000068	IC 64 SDRAM	[M]
IC3501	C9ZB00000431	IC VIDEO SELECTOR	[M]
IC4201	C0FBBK000035	IC A/D CONVERTER	[M]
IC4301	C0ABBB000118	IC OP-AMP	[M]
IC6001	MN101C35DCY	IC MICRO CONTROLLER	[M]
IC6011	C0EBE0000106	IC REGULATOR	[M]
IC6061	C0GAG0000007	IC CHANGER MOTOR DRIVER	[M]
IC6062	C0GAG0000007	IC CHANGER MOTOR DRIVER	[M]
IC6201	C0EBE0000070	IC RESET	[M]
IC6251	C0CBCBE00003	IC REGULATOR	[M]
IC6261	C0JBAA000001	IC INVERTER	[M]
IC6262	C0JBAA000001	IC INVERTER	[M]
IC6301	RFKFCF70P160	IC 16M FROM	[SPC]
IC6311	C0JBAZ001251	IC LATCH	[M]
IC6312	C0JBAZ001251	IC LATCH	[M]
IC6401	RCDGP1UM272R	IC INFRARED RAY	[M]
IC6561	C1DB00000980	IC CLOCK GENERATOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		TRANSISTORS	
Q1021	B1BACT000012	TRANSISTOR	[M]
Q1051	B3PBA0000104	TRANSISTOR	[M]
Q1052	2SD19960SA	TRANSISTOR	[M]
Q1115	B1DHCC000029	TRANSISTOR	[M]
Q1125	2SB14170JA	TRANSISTOR	[M]
Q1126	XN0150100L	TRANSISTOR	[M]
Q4302	2SD0601AHL	TRANSISTOR	[M]
Q4410	2SD132800L	TRANSISTOR	[M]
Q4419	2SD132800L	TRANSISTOR	[M]
Q5111	B1ADPC000004	TRANSISTOR	[M]
Q5115	B1ADPC000004	TRANSISTOR	[M]
Q5211	UNR212100L	TRANSISTOR	[M]
Q5221	2SD1819A0L	TRANSISTOR	[M]
Q5225	2SD1819A0L	TRANSISTOR	[M]
Q6091	2SD1996-STA	TRANSISTOR	[M]
Q9001	B3NAA0000068	PHOTO INTERRUPTER	[M]
Q9101	B3NAA0000078	PHOTO INTERRUPTER	[M]
Q9102	B3NAA0000011	PHOTO INTERRUPTER	[M]
Q9103	B3NAB0000027	PHOTO INTERRUPTER	[M]
QR1115	UNR221300L	TRANSISTOR	[M]
QR3521	UNR221200L	TRANSISTOR	[M]
QR4301	UNR221100L	TRANSISTOR	[M]
QR4302	XN0431100L	TRANSISTOR	[M]
QR6061	UNR221100L	TRANSISTOR	[M]
QR6062	UNR221100L	TRANSISTOR	[M]
QR6403	UNR511F00L	TRANSISTOR	[M]
QR6441	UNR521F00L	TRANSISTOR	[M]
QR6442	UNR521F00L	TRANSISTOR	[M]
QR6443	UNR521F00L	TRANSISTOR	[M]
QR6444	UNR521F00L	TRANSISTOR	[M]
QR6445	UNR521F00L	TRANSISTOR	[M]
		DIODES	
D1002	J0LG00000006	DIODE	[M]
D1011	B0EBKT000002	DIODE	[M]
D1031	B0HADV000001	DIODE	[M]
D1041	B0HAGM000006	DIODE	[M]
D1051	B0AAED000003	DIODE	[M]
D1052	B0AAED000003	DIODE	[M]
D1053	MAZ40220LF	DIODE	[M]
D1054	B0HAGM000006	DIODE	[M]
D1101	MAZ70750AC	DIODE	[M]
D1111	B0JAMG000013	DIODE	[M]
D1121	B0JAMG000013	DIODE	[M]
D1122	B0EAKL000062	DIODE	[M]
D1123	B0EAKL000062	DIODE	[M]
D1125	MA2J11100L	DIODE	[M]
D1132	MAZ71200BC	DIODE	[M]
D1141	B0JAML000004	DIODE	[M]
D1151	B0JAML000004	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D1152	B0JAML000004	DIODE	[M]
D1154	B0EAKL000062	DIODE	[M]
D1155	B0EAKL000062	DIODE	[M]
D1156	B0EAKL000062	DIODE	[M]
D1161	B0HAGM000006	DIODE	[M]
D1162	MAZ40300HF	DIODE	[M]
D1171	B0JAME000037	DIODE	[M]
D1172	B0EAKL000062	DIODE	[M]
D1173	B0EAKL000062	DIODE	[M]
D4301	MAZ40560HF	DIODE	[M]
D5131	MA2J72800L	DIODE	[M]
D6061	B0EAKL000062	DIODE	[M]
D6062	B0EAKL000062	DIODE	[M]
D6064	B0EAKL000062	DIODE	[M]
D6065	B0EAKL000062	DIODE	[M]
D6403	B3AAA0000534	DIODE	[M]
D6441	B3ABA0000397	DIODE	[M]
D6442	B3ABA0000397	DIODE	[M]
D6443	B3ABA0000397	DIODE	[M]
D6444	B3ABA0000397	DIODE	[M]
D6445	B3ABA0000397	DIODE	[M]
		COILS & INDUCTORS	
L1001	ELF15N003A	COIL	[M] ⚠
L1111	G0A100H00014	INDUCTOR	[M]
L1115	ELELN100KA	COIL	[M]
L1131	G0C330KA0004	COIL	[M]
L1141	G0C330KA0004	COIL	[M]
L1151	G0A220G00018	INDUCTOR	[M]
L2001	G1C100K00020	CHIP INDUCTOR	[M]
L2002	G1C100K00020	CHIP INDUCTOR	[M]
L3101	G1C100K00020	CHIP INDUCTOR	[M]
L3501	G0C220JA0019	AXIAL INDUCTOR	[M]
L4211	G1C220KA0038	CHIP CAPACITOR	[M]
L4301	G0C221JA0019	COIL	[M]
L5110	G1C100K00020	CHIP INDUCTOR	[M]
L5221	G1C100K00020	CHIP INDUCTOR	[M]
L6001	G0C101JA0019	INDUCTOR	[M]
L6561	G1C220KA0038	CHIP BEADS	[M]
L6562	G1C220KA0038	CHIP CAPACITOR	[M]
LB2501	J0JHC0000045	CHIP BEADS	[M]
LB2502	J0JHC0000045	CHIP BEADS	[M]
LB2503	J0JHC0000045	CHIP BEADS	[M]
LB3001	J0JHC0000045	CHIP BEADS	[M]
LB3002	J0JHC0000045	CHIP BEADS	[M]
LB3201	D0GB101JA002	10 1/16W	[M]
LB3202	D0GB101JA002	10 1/16W	[M]
LB3203	D0GB101JA002	10 1/16W	[M]
LB3204	J0JCC0000119	CHIP INDUCTOR	[M]
LB3205	J0JCC0000119	CHIP INDUCTOR	[M]
LB3206	J0JCC0000119	CHIP INDUCTOR	[M]
LB3207	J0JCC0000119	CHIP INDUCTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
LB3208	J0JCC0000119	CHIP INDUCTOR	[M]
LB3531	J0JBC0000015	CHIP INDUCTOR	[M]
LB3532	J0JBC0000015	CHIP INDUCTOR	[M]
LB3533	J0JBC0000015	CHIP INDUCTOR	[M]
LB3534	J0JCC0000186	CHIP BEADS	[M]
LB3535	J0JBC0000015	CHIP INDUCTOR	[M]
LB3536	J0JBC0000015	CHIP INDUCTOR	[M]
LB4200	J0JBC0000015	CHIP INDUCTOR	[M]
LB4201	J0JCC0000119	CHIP INDUCTOR	[M]
LB4214	J0JCC0000119	CHIP INDUCTOR	[M]
LB4215	J0JCC0000119	CHIP INDUCTOR	[M]
LB4216	J0JBC0000015	CHIP INDUCTOR	[M]
LB4217	J0JBC0000015	CHIP INDUCTOR	[M]
LB4218	ERJ3GEY0R00V	0 1/16W	[M]
LB5101	J0JHC0000045	CHIP BEADS	[M]
LB5102	J0JBC0000015	CHIP INDUCTOR	[M]
LB5103	J0JBC0000015	CHIP INDUCTOR	[M]
LB5201	J0JBC0000015	CHIP INDUCTOR	[M]
LB5204	J0JCC0000119	CHIP INDUCTOR	[M]
LB5205	J0JCC0000119	CHIP INDUCTOR	[M]
LB5206	J0JBC0000015	CHIP INDUCTOR	[M]
LB5207	J0JCC0000119	CHIP INDUCTOR	[M]
LB5208	J0JBC0000015	CHIP INDUCTOR	[M]
LB5210	J0JCC0000119	CHIP INDUCTOR	[M]
LB5211	J0JCC0000119	CHIP INDUCTOR	[M]
LB5212	J0JCC0000119	CHIP INDUCTOR	[M]
LB5213	J0JCC0000119	CHIP INDUCTOR	[M]
LB5214	J0JHC0000045	CHIP BEADS	[M]
LB5215	J0JCC0000119	CHIP INDUCTOR	[M]
LB5217	J0JCC0000119	CHIP INDUCTOR	[M]
LB5219	J0JCC0000119	CHIP INDUCTOR	[M]
LB5220	J0JBC0000015	CHIP INDUCTOR	[M]
LB5222	ERJ3GEY0R00V	0 1/16W	[M]
LB5228	J0JBC0000015	CHIP INDUCTOR	[M]
LB5229	J0JBC0000015	CHIP INDUCTOR	[M]
LB5231	J0JHC0000045	CHIP BEADS	[M]
LB5233	J0JHC0000045	CHIP BEADS	[M]
LB5235	J0JBC0000015	CHIP INDUCTOR	[M]
LB6061	J0JBC0000015	CHIP INDUCTOR	[M]
LB6062	J0JBC0000015	CHIP INDUCTOR	[M]
LB6063	J0JBC0000015	CHIP INDUCTOR	[M]
LB6064	J0JBC0000015	CHIP INDUCTOR	[M]
LB6065	J0JBC0000015	CHIP INDUCTOR	[M]
LB6066	J0JBC0000015	CHIP INDUCTOR	[M]
LB6067	J0JBC0000015	CHIP INDUCTOR	[M]
LB6261	J0JBC0000015	CHIP INDUCTOR	[M]
LB6301	J0JHC0000045	CHIP BEADS	[M]
LB6561	J0JBC0000015	CHIP INDUCTOR	[M]
LB6562	J0JCC0000167	CHIP INDUCTOR	[M]
LB6564	J0JCC0000077	CHIP BEEZ	[M]
LB6566	J0JBC0000015	CHIP INDUCTOR	[M]
LB6567	J0JCC0000119	CHIP INDUCTOR	[M]
		SWITCHES	

Ref. No.	Part No.	Part Name & Description	Remarks
S6401	EVQ21405R	SW STOP	[M]
S6402	EVQ21405R	SW PAUSE	[M]
S6403	EVQ21405R	SW PLAY	[M]
S6404	EVQ21405R	SW DISC EXCHANGE	[M]
S6405	EVQ21405R	SW DISC SKIP	[M]
S6406	EVQ21405R	SW R. SKIP	[M]
S6407	EVQ21405R	SW F. SKIP	[M]
S6408	EVQ21405R	SW OPEN/CLOSE	[M]
S6409	EVQ21405R	SW POWER	[M]
S6410	EVQ21405R	SW REMASTER	[M]
S6411	EVQ21405R	SW SEQUENTIAL	[M]
S9001	K0L1BA000086	SW	[M]
		CONNECTORS	
CN6001	K1MN32A00018	32P CONNECTOR	[M]
CN6002	RJS2A7711	11P CONNECTOR	[M]
CN6003	K1MN11A00030	11P CONNECTORS	[M]
CN6004	K1MN11A00030	11P CONNECTORS	[M]
CN6401	K1MN32B00012	11P CONNECTOR	[M]
CN6404	RJS2A7711	CONNECTOR	[M]
CN9003	K1MN11B00065	CONNECTOR	[M]
CN9102	K1MN11B00065	11P CONNECTOR	[M]
FP2501	K1MN15A00037	15P CONNECTOR	[M]
FP5101	K1MN30A00048	30P CONNECTOR	[M]
FP5102	K1MN50B00021	50P CONNECTOR	[M]
FP5201	K1MN50A00005	50P CONNECTOR	[M]
PP3201	K1KA22A00046	22P CONNECTOR	[M]
PP4301	K1KA14A00135	14P CONNECTOR	[M]
PS3201	K1KB22A00025	22P CONNECTOR	[M]
PS4201	K1KB14A00037	26P CONNECTOR	[M]
		TRANSFORMERS	
T1021	ETS28AV196AC	SW TRANS	[M] ⚠
		OSCILLATORS	
X6001	EF0EC8004T4	CERAMIC OSCILLATOR	[M]
X6501	H0J368600003	CRYSTAL OSCILLATOR	[M]
		DISPLAY TUBE	
FL4201	F1H0J1050018	1 6.3V	[M]
FL6251	F1J1E1040022	0.1 25V	[M]
FL6252	F1H0J1050018	1 6.3V	[M]
FL6253	F1H0J1050018	1 6.3V	[M]
FL6254	F1H0J1050018	1 6.3V	[M]
FL6401	A2BB00000109	FL DISPLAY	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		FUSES	
F1001	K5D162BK0005	1.6A FUSE	[M] ⚠
		FUSE HOLDERS	
ZA1001	EYF52BC	FUSE HOLDER	[M]
ZA1002	EYF52BC	FUSE HOLDER	[M]
		EARTH TERMINAL	
ZA1021	TUCJ5062	HEATSINK	[M]
ZA1111	K4CZ01000027	TERMINALS	[M]
ZA4751	K4CZ01000027	TERMINALS	[M]
ZA4752	K4CZ01000027	TERMINALS	[M]
ZA4753	K4CZ01000027	TERMINALS	[M]
ZA6001	K4CZ01000027	TERMINALS	[M]
		FUSE PROTECTOR	
LR1041	VLP0392-T	PROTECTOR	[M] ⚠
PR1101	VSF0015A10T	IC PROTECTOR	[M] ⚠
PR1161	D4FAR2500001	FUSIBLE RESISTOR	[M] ⚠
PR1171	VSF0015A10T	IC PROTECTOR	[M] ⚠
		JACKS	
JK4501	K2YZ08000016	JK COMBINE	[M]
P1001	K2AA2B000004	AC INLET	[M] ⚠
		WIRES	
FC6401	RWJ4303045XX	3 P WIRE	[M]
FC9101	RWJ4906082SS	WIRE	[M]
		RESISTORS	
R1	ERJ3GEY0R00V	0 1/16W	[M]
R2	ERJ3GEY0R00V	0 1/16W	[M]
R3	ERJ3GEY0R00V	0 1/16W	[M]
R4	ERJ3GEY0R00V	0 1/16W	[M]
R1001	ERDS2FJ474T	470K 1/4W	[M]
R1002	ERDS2FJ474T	470K 1/4W	[M]
R1031	ERDS2FJ224T	220K 1/4W	[M]
R1032	ERDS2FJ224T	220K 1/4W	[M]
R1041	ERDS2TJ334T	330K 1/4W	[M]
R1042	ERDS2TJ334T	330K 1/4W	[M]
R1043	ERG2SJ680P	68 2W	[M]
R1051	ERDS2TJ750T	75 1/4W	[M]
R1052	ERDS2TJ2R2T	2.2 1/4W	[M]
R1053	ERDS2TJ331T	330 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R1054	ER0S2THF6800	68 1/4W	[M]
R1101	D0GB750JA019	75 1/16W	[M]
R1102	D1BB1201A028	12 1/16W	[M]
R1103	D1BB1201A028	12 1/16W	[M]
R1104	ERJ3GEYJ561V	560 1/16W	[M]
R1105	D0GB271JA002	270 1/16W	[M]
R1106	D0GB392JA002	3.9K 1/16W	[M]
R1107	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1115	ERJ3GEYJ104V	100K 1/16W	[M]
R1116	ERJ3GEYJ102V	1K 1/16W	[M]
R1125	ERJ3GEYF132V	1.3K 1/16W	[M]
R1126	D1BB1201A028	12 1/16W	[M]
R1127	D1BB1201A028	12 1/16W	[M]
R1128	D0GB151JA002	150 1/16W	[M]
R1161	ERJ3GEYJ104V	100K 1/16W	[M]
R1181	D0GB101JA002	100 1/16W	[M]
R2011	J0JBC0000015	INDUCTOR	[M]
R2012	D0GB752JA002	7.5K 1/16W	[M]
R2013	J0JBC0000015	INDUCTOR	[M]
R2014	ERJ3GEYJ223V	22K 1/16W	[M]
R2015	J0JBC0000015	INDUCTOR	[M]
R2016	ERJ3GEYJ822V	8.2K 1/16W	[M]
R2017	J0JBC0000015	INDUCTOR	[M]
R2018	ERJ3GEYJ822V	8.2K 1/16W	[M]
R2021	ERJ3GEYJ153V	15K 1/16W	[M]
R2022	ERJ3GEYJ103V	10K 1/16W	[M]
R2023	ERJ3GEYJ153V	15K 1/16W	[M]
R2031	D0GB683JA002	68K 1/16W	[M]
R2032	ERJ3GEYJ102V	1K 1/16W	[M]
R2033	ERJ3RBD153V	15K 3W	[M]
R2041	ERJ3GEYJ473V	47K 1/16W	[M]
R2051	ERJ3RBD392V	3.9K 3W	[M]
R2501	D0GB101JA002	100 1/16W	[M]
R2502	D0GB101JA002	100 1/16W	[M]
R2503	ERJ3GEY0R00V	0 1/16W	[M]
R2504	ERJ14YKR39H	0.39 1/4W	[M]
R2521	D0GF6R8JA017	6.8 1/16W	[M]
R2522	ERJ3GEY0R00V	0 1/16W	[M]
R2523	ERJ3GEY0R00V	0 1/16W	[M]
R2524	ERJ3GEY0R00V	0 1/16W	[M]
R3001	J0JCC0000119	INDUCTOR	[M]
R3002	ERJ3GEYJ103V	10K 1/16W	[M]
R3003	ERJ3GEYJ103V	10K 1/16W	[M]
R3012	ERJ3GEYJ473V	47K 1/16W	[M]
R3013	ERJ3GEYJ330V	33 1/16W	[M]
R3041	D0GB101JA002	100 1/16W	[M]
R3043	D0GB101JA002	100 1/16W	[M]
R3101	ERJ3RBD153V	15K 3W	[M]
R3102	ERJ3RBD272V	2.7K 3W	[M]
R3103	ERJ3RBD223V	22K 3W	[M]
R3104	ERJ3RBD222V	2.2K 3W	[M]
R3105	ERJ3RBD152V	1.5K 3W	[M]
R3111	ERJ3RED620V	62 3W	[M]
R3112	ERJ3RED150V	15 3W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R3116	ERJ3RED620V	62 3W	[M]
R3117	ERJ3RED130V	13 3W	[M]
R3121	ERJ3RBD101V	100 3W	[M]
R3122	ERJ3RED160V	16 3W	[M]
R3126	ERJ3RED560V	56 3W	[M]
R3131	ERJ3RED560V	56 3W	[M]
R3521	ERJ3GEYJ222V	2.2K 1/16W	[M]
R3522	ERJ3GEYJ103V	10K 1/16W	[M]
R3531	D1BB75R0A012	75 1/16W	[M]
R3532	D0GB750JA019	75 1/16W	[M]
R3533	D1BB75R0A012	75 1/16W	[M]
R3534	D1BB75R0A012	75 1/16W	[M]
R3535	D0GB750JA019	75 1/16W	[M]
R3536	D0GB750JA019	75 1/16W	[M]
R4201	ERJ3GEYJ470V	47 1/16W	[M]
R4301	D0GB152JA002	1.5K 1/16W	[M]
R4302	ERJ3GEYJ222V	2.2K 1/16W	[M]
R4304	D0GB332JA002	3.3K 1/16W	[M]
R4313	ERJ3GEYJ223V	22K 1/16W	[M]
R4331	ERJ3GEYD752V	7.5K 1/16W	[M]
R4332	ERJ3GEYD752V	7.5K 1/16W	[M]
R4355	D0HB153ZA002	15K 3W	[M]
R4356	D0HB153ZA002	15K 3W	[M]
R4362	ERJ3GEYJ103V	10K 1/16W	[M]
R4422	ERJ3GEYJ473V	47K 1/16W	[M]
R4423	ERJ3GEYJ473V	47K 1/16W	[M]
R4428	D0GB821JA002	820 1/16W	[M]
R4429	D0GB821JA002	820 1/16W	[M]
R4448	D0GB821JA002	820 1/16W	[M]
R4454	D0GB821JA002	820 1/16W	[M]
R4459	ERJ3GEYJ221V	220 1/16W	[M]
R4460	ERJ3GEYJ221V	220 1/16W	[M]
R5101	ERJ3GEYJ472V	4.7K 1/16W	[M]
R5111	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5112	ERJ12YJ270H	27 1/2W	[M]
R5113	ERJ3GEYJ473V	47K 1/16W	[M]
R5114	ERJ3GEYJ223V	22K 1/16W	[M]
R5115	ERJ3GEYJ2R2V	2.2 1/16W	[M]
R5116	ERJ12YJ270H	27 1/2W	[M]
R5117	ERJ3GEYJ473V	47K 1/16W	[M]
R5121	D0GB560JA002	56 1/16W	[M]
R5122	D0GB560JA002	56 1/16W	[M]
R5123	D0GB560JA002	56 1/16W	[M]
R5124	D0GB560JA002	56 1/16W	[M]
R5125	D0GB560JA002	56 1/16W	[M]
R5126	ERJ3GEYJ102V	1K 1/16W	[M]
R5127	D0GB560JA002	56 1/16W	[M]
R5201	ERJ3GEY0R00V	0 1/16W	[M]
R5202	ERJ3GEY0R00V	0 1/16W	[M]
R5221	ERJ3GEY0R00V	0 1/16W	[M]
R5222	ERJ3GEYJ102V	1K 1/16W	[M]
R5223	ERJ3GEYJ331V	330 1/16W	[M]
R5225	ERJ3GEY0R00V	0 1/16W	[M]
R5226	ERJ3GEYJ102V	1K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R5227	ERJ3GEYJ331V	330 1/16W	[M]
R5231	J0JCC0000119	INDUCTOR	[M]
R5232	J0JCC0000119	INDUCTOR	[M]
R5233	ERJ3GEYJ222V	2.2K 1/16W	[M]
R5234	ERJ3GEYJ222V	2.2K 1/16W	[M]
R6011	ERJ3GEYJ473V	47K 1/16W	[M]
R6012	ERJ3GEYJ331V	330 1/16W	[M]
R6021	ERJ3GEYJ103V	10K 1/16W	[M]
R6022	ERJ3GEYJ103V	10K 1/16W	[M]
R6023	ERJ3GEYJ103V	10K 1/16W	[M]
R6024	ERJ3GEY0R00V	0 1/16W	[M]
R6025	ERJ3GEY0R00V	0 1/16W	[M]
R6026	D0GB302JA008	3K 1/16W	[M]GCS
R6026	ERJ3GEYJ182V	1.8K 1/16W	[M]GN
R6031	ERJ3GEYJ103V	10K 1/16W	[M]
R6032	ERJ3GEYJ103V	10K 1/16W	[M]
R6033	ERJ3GEYJ103V	10K 1/16W	[M]
R6061	ERJ3GEYJ331V	330 1/16W	[M]
R6062	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6063	ERJ3GEYJ103V	10K 1/16W	[M]
R6064	ERJ3GEYJ331V	330 1/16W	[M]
R6065	ERJ3GEYJ331V	330 1/16W	[M]
R6066	ERJ3GEY0R00V	0 1/16W	[M]
R6067	ERJ3GEYJ331V	330 1/16W	[M]
R6068	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6069	ERJ3GEYJ103V	10K 1/16W	[M]
R6070	D0GB151JA002	150 1/16W	[M]
R6071	D0GB121JA002	120 1/16W	[M]
R6072	ERJ3GEYJ223V	22K 1/16W	[M]
R6073	ERJ3GEYJ223V	22K 1/16W	[M]
R6074	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6075	ERJ3GEYJ104V	100K 1/16W	[M]
R6076	D0GB393JA002	39K 1/16W	[M]
R6077	D0GB272JA002	2.7K 1/16W	[M]
R6081	ERJ3GEYJ473V	47K 1/16W	[M]
R6082	ERJ3GEYJ473V	47K 1/16W	[M]
R6083	ERJ3GEYJ473V	47K 1/16W	[M]
R6084	ERJ3GEYJ473V	47K 1/16W	[M]
R6085	ERJ3GEYJ473V	47K 1/16W	[M]
R6086	ERJ3GEYJ473V	47K 1/16W	[M]
R6087	ERJ3GEYJ473V	47K 1/16W	[M]
R6088	ERJ3GEYJ473V	47K 1/16W	[M]
R6091	ERJ3GEYJ103V	10K 1/16W	[M]
R6092	ERJ3GEYJ103V	10K 1/16W	[M]
R6093	ERJ3GEYJ103V	10K 1/16W	[M]
R6094	ERJ3GEYJ103V	10K 1/16W	[M]
R6095	ERJ3GEYJ103V	10K 1/16W	[M]
R6201	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6261	ERJ3GEYJ103V	10K 1/16W	[M]
R6311	ERJ3GEYJ103V	10K 1/16W	[M]
R6312	ERJ3GEYJ103V	10K 1/16W	[M]
R6351	D0GB101JA002	100 1/16W	[M]
R6403	ERJ3GEYJ102V	1K 1/16W	[M]
R6406	ERJ3GEYJ221V	220 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R6407	D0GB821JA002	820 1/16W	[M]
R6408	ERJ3GEYJ102V	1K 1/16W	[M]
R6409	D0GB122JA019	1.2K 1/16W	[M]
R6410	D0GB152JA002	1.5K 1/16W	[M]
R6411	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6412	D0GB821JA002	820 1/16W	[M]
R6413	ERJ3GEYJ102V	1K 1/16W	[M]
R6414	D0GB821JA002	820 1/16W	[M]
R6415	ERJ3GEYJ102V	1K 1/16W	[M]
R6416	D0GB272JA002	2.7K 1/16W	[M]
R6417	ERJ3GEYJ182V	1.8K 1/16W	[M]
R6433	ERDS2TJ470T	47 1/4W	[M]
R6441	ERJ3GEYJ102V	1K 1/16W	[M]
R6442	ERJ3GEYJ102V	1K 1/16W	[M]
R6443	ERJ3GEYJ102V	1K 1/16W	[M]
R6444	ERJ3GEYJ102V	1K 1/16W	[M]
R6445	ERJ3GEYJ102V	1K 1/16W	[M]
R6446	ERJ3GEYJ221V	220 1/16W	[M]
R6447	ERJ3GEYJ221V	220 1/16W	[M]
R6448	ERJ3GEYJ221V	220 1/16W	[M]
R6449	ERJ3GEYJ221V	220 1/16W	[M]
R6450	ERJ3GEYJ221V	220 1/16W	[M]
R6562	ERJ3GEYJ221V	220 1/16W	[M]
R6563	ERJ3GEYJ103V	10K 1/16W	[M]
R6564	D0GB100JA002	10 1/16W	[M]
R6565	ERJ3GEYJ470V	47 1/16W	[M]
K2041	ERJ3GEY0R00V	0 1/16W	[M]
K2501	ERJ3GEY0R00V	0 1/16W	[M]
K2502	ERJ3GEY0R00V	0 1/16W	[M]
K2522	ERJ3GEY0R00V	0 1/16W	[M]
K3011	ERJ6GEY0R00V	0 1/10W	[M]
K3012	ERJ3GEY0R00V	0 1/16W	[M]
K3013	ERJ3GEY0R00V	0 1/16W	[M]
K3014	ERJ3GEY0R00V	0 1/16W	[M]
K3015	ERJ3GEY0R00V	0 1/16W	[M]
K3016	ERJ3GEY0R00V	0 1/16W	[M]
K3017	ERJ3GEY0R00V	0 1/16W	[M]
K3111	ERJ3GEY0R00V	0 1/16W	[M]
K3116	ERJ3GEY0R00V	0 1/16W	[M]
K3121	ERJ3GEY0R00V	0 1/16W	[M]
K3126	ERJ3GEY0R00V	0 1/16W	[M]
K3131	ERJ3GEY0R00V	0 1/16W	[M]
K3505	ERJ3GEY0R00V	0 1/16W	[M]
K5201	ERJ3GEY0R00V	0 1/16W	[M]
K5202	ERJ3GEY0R00V	0 1/16W	[M]
K5203	ERJ3GEY0R00V	0 1/16W	[M]
K5204	ERJ3GEY0R00V	0 1/16W	[M]
K6091	ERJ3GEY0R00V	0 1/16W	[M]
K6253	ERJ6GEY0R00V	0 1/10W	[M]
K6254	ERJ3GEY0R00V	0 1/16W	[M]
K6301	ERJ3GEY0R00V	0 1/16W	[M]
K6302	ERJ3GEY0R00V	0 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
RA2025	EXBV4V473JV	47K 1/16W	[M]
RA2501	EXBV4V103JV	10K 1/16W	[M]
RA2521	EXBV8V473JV	47K 1/16W	[M]
RA3001	EXBV8V820JV	82 1/16W	[M]
RA3002	EXBV8V820JV	82 1/16W	[M]
RA3003	EXBV8V820JV	82 1/16W	[M]
RA3004	EXBV8V820JV	82 1/16W	[M]
RA3005	EXBV4V220JV	22 1/16W	[M]
RA3006	EXBV8V820JV	82 1/16W	[M]
RA3007	EXBV8V820JV	82 1/16W	[M]
RA3008	EXBV8V820JV	82 1/16W	[M]
RA3009	EXBV8V820JV	82 1/16W	[M]
RA3010	EXBV8V820JV	82 1/16W	[M]
RA3011	EXBV8V820JV	82 1/16W	[M]
RA3012	EXBV8V820JV	82 1/16W	[M]
RA3025	EXBV4V102JV	1K 1/16W	[M]
RA3042	EXBV4V101JV	100 1/16W	[M]
RA5121	EXBV8V560JV	56 1/16W	[M]
RA5122	EXBV4V560JV	56 1/16W	[M]
RA5123	EXBV4V560JV	56 1/16W	[M]
RA6201	EXBV4V472JV	4.7K 1/16W	[M]
RA6261	EXBV4V103JV	10K 1/16W	[M]
RA6351	EXBV4V472JV	4.7K 1/16W	[M]
W301	ERJ3GEY0R00V	0 1/16W	[M]
W302	ERJ3GEY0R00V	0 1/16W	[M]
W303	ERJ3GEY0R00V	0 1/16W	[M]
W304	ERJ3GEY0R00V	0 1/16W	[M]
		CAPACITORS	
C1001	ECQU2A104MLC	0.1 100V	[M] ⚠
C1002	ECQU2A104MLC	0.1 100V	[M] ⚠
C1003	F1BAF471A013	470 10V	[M] ⚠
C1005	F1BAF1020011	2P 10V	[M] ⚠
C1011	ECA2WHG330E	33 250V	[M]
C1012	ECA2WHG100E	10 250V	[M]
C1021	F1B3D221A002	220P 2000	[M]
C1031	F1B2H1820001	1800P 500V	[M]
C1041	ECQB1H223JF4	0.022 50V	[M]
C1051	ECQB1H104JF4	0.1 50V	[M]
C1052	ECQB1H683JF4	0.068 50V	[M]
C1053	ECQB1H104JF4	0.1 50V	[M]
C1101	ECQV1H104JL2	0.1 50V	[M]
C1102	ECQB1H223JF4	0.022 50V	[M]
C1111	F2A1A1020056	1000P 10V	[M]
C1112	F2A1A1020004	1000P 10V	[M]
C1115	ECJ1VF1C104Z	0.1 16V	[M]
C1116	F2A1A221A206	220P 10V	[M]
C1117	F2A1A102A206	1000P 10V	[M]
C1121	F2A1A1020056	1000P 10V	[M]
C1125	ECJ1VF1C104Z	0.1 16V	[M]
C1126	ECJ1VB1H102K	1000P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C1127	F2A1A102A206	1000P 10V	[M]
C1141	F2A1E2210050	220P 25V	[M]
C1151	F2A1E3310051	330P 25V	[M]
C1153	F2A1E2210008	220P 25V	[M]
C1154	F2A1C221A236	220P 16V	[M]
C1155	F2A1C221A236	220P 16V	[M]
C1156	ECUV1C104KBV	0.1 16V	[M]
C1157	ECUV1C104KBV	0.1 16V	[M]
C1161	F2A1H5600009	56P 50V	[M]
C1171	F2A1A2210063	220P 10V	[M]
C2001	F2G0J1010013	100P 6.3V	[M]
C2002	EEVFC0J101P	100P 6.3V	[M]
C2003	ECUVNC104ZFV	0.1 16V	[M]
C2004	ECUVNC104ZFV	0.1 16V	[M]
C2005	ECUVNC104ZFV	0.1 16V	[M]
C2006	ECUVNC104ZFV	0.1 16V	[M]
C2011	ECUV1C104KBV	0.1 16V	[M]
C2012	ECUV1C104KBV	0.1 16V	[M]
C2015	ECJ1VC1H102J	1000P 50V	[M]
C2016	ECUV1H821JCV	820P 50V	[M]
C2021	ECJ1VB1H472K	4700P 50V	[M]
C2023	ECJ1VC1H102J	1000P 50V	[M]
C2031	ECJ1VF1A105Z	1 10V	[M]
C2032	ECJ1VF1A105Z	1 10V	[M]
C2033	F1H0J1050013	1 6.3V	[M]
C2034	ECJ1VB1H152K	1500P 50V	[M]
C2035	ECJ1VC1H221J	220P 50V	[M]
C2036	ECUV1C104KBV	0.1 16V	[M]
C2037	ECJ1VB1C103K	0.01 16V	[M]
C2051	ECUV1C333KBV	0.033 16V	[M]
C2052	ECJ1VC1H330J	33P 50V	[M]
C2053	ECUVNC104ZFV	0.1 16V	[M]
C2054	ECUVNC104ZFV	0.1 16V	[M]
C2055	ECUVNC104ZFV	0.1 16V	[M]
C2056	ECJ1VB1C103K	0.01 16V	[M]
C2057	ECJ1VC1H181J	180P 50V	[M]
C2058	ECJ1VB1C183K	0.018 16V	[M]
C2059	ECJ1VB1H562K	5600P 50V	[M]
C2060	ECUV1C104KBV	0.1 16V	[M]
C2501	ECEV1CA101WP	100 16V	[M]
C2502	ECJ1VF1C104Z	0.1 16V	[M]
C2503	ECJ1VF1C104Z	0.1 16V	[M]
C2504	ECJ1VF1C104Z	0.1 16V	[M]
C2511	ECJ1VB1H103K	0.01 50V	[M]
C2512	ECJ1VB1H103K	0.01 50V	[M]
C2513	ECJ1VB1H103K	0.01 50V	[M]
C2514	ECUV1C104KBV	0.1 16V	[M]
C2521	EEVFC0J101P	100P 6.3V	[M]
C2522	ECEV1CA220WR	22 16V	[M]
C2523	EEVFC0J221P	220P 6.3V	[M]
C2524	ECJ1VF1C104Z	0.1 16V	[M]
C2525	ECJ1VF1C104Z	0.1 16V	[M]
C2526	ECJ1VF1C104Z	0.1 16V	[M]
C2527	ECJ1VF1C104Z	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2528	ECJ1VF1C104Z	0.1 16V	[M]
C2529	ECJ1VF1C104Z	0.1 16V	[M]
C3001	F2G0J331A015	330P 6.3V	[M]
C3002	F2G0J331A015	330P 6.3V	[M]
C3003	ECUVNC104ZFV	0.1 16V	[M]
C3004	ECUVNC104ZFV	0.1 16V	[M]
C3005	ECUVNC104ZFV	0.1 16V	[M]
C3006	ECUVNC104ZFV	0.1 16V	[M]
C3007	ECUVNC104ZFV	0.1 16V	[M]
C3008	ECUVNC104ZFV	0.1 16V	[M]
C3009	ECUVNC104ZFV	0.1 16V	[M]
C3010	ECUVNC104ZFV	0.1 16V	[M]
C3011	ECUVNC104ZFV	0.1 16V	[M]
C3012	ECUVNC104ZFV	0.1 16V	[M]
C3013	ECUVNC104ZFV	0.1 16V	[M]
C3014	ECUVNC104ZFV	0.1 16V	[M]
C3015	ECUVNC104ZFV	0.1 16V	[M]
C3016	ECUVNC104ZFV	0.1 16V	[M]
C3017	ECUVNC104ZFV	0.1 16V	[M]
C3018	ECUVNC104ZFV	0.1 16V	[M]
C3019	ERJ3GEYJ331V	330 1/16W	[M]
C3020	ECUVNC104ZFV	0.1 16V	[M]
C3021	ECUVNC104ZFV	0.1 16V	[M]
C3022	ECUVNC104ZFV	0.1 16V	[M]
C3023	ECUVNC104ZFV	0.1 16V	[M]
C3024	ECUVNC104ZFV	0.1 16V	[M]
C3025	ECUVNC104ZFV	0.1 16V	[M]
C3026	ECUVNC104ZFV	0.1 16V	[M]
C3027	ECUVNC104ZFV	0.1 16V	[M]
C3028	ECUVNC104ZFV	0.1 16V	[M]
C3029	ECUVNC104ZFV	0.1 16V	[M]
C3031	ECUVNC104ZFV	0.1 16V	[M]
C3032	ECUVNC104ZFV	0.1 16V	[M]
C3033	ECUVNC104ZFV	0.1 16V	[M]
C3041	ECJ1VC1H220J	22P 50V	[M]
C3051	ECUVNC104ZFV	0.1 16V	[M]
C3052	ECUVNC104ZFV	0.1 16V	[M]
C3053	ECUVNC104ZFV	0.1 16V	[M]
C3054	ECUVNC104ZFV	0.1 16V	[M]
C3055	ECUVNC104ZFV	0.1 16V	[M]
C3061	ECUVNC104ZFV	0.1 16V	[M]
C3062	ECUVNC104ZFV	0.1 16V	[M]
C3063	ECUVNC104ZFV	0.1 16V	[M]
C3064	ECUVNC104ZFV	0.1 16V	[M]
C3065	ECUVNC104ZFV	0.1 16V	[M]
C3101	F2G0J331A015	330P 6.3V	[M]
C3102	ECUVNC104ZFV	0.1 16V	[M]
C3103	ECUVNC104ZFV	0.1 16V	[M]
C3104	ECUVNC104ZFV	0.1 16V	[M]
C3105	F1H0J1050013	1 6.3V	[M]
C3106	F1H0J1050013	1 6.3V	[M]
C3107	ECUVNC104ZFV	0.1 16V	[M]
C3501	F2A0J221A245	220P 6.3V	[M]
C3502	ECJ1VF1H103Z	0.01 50V	[M]

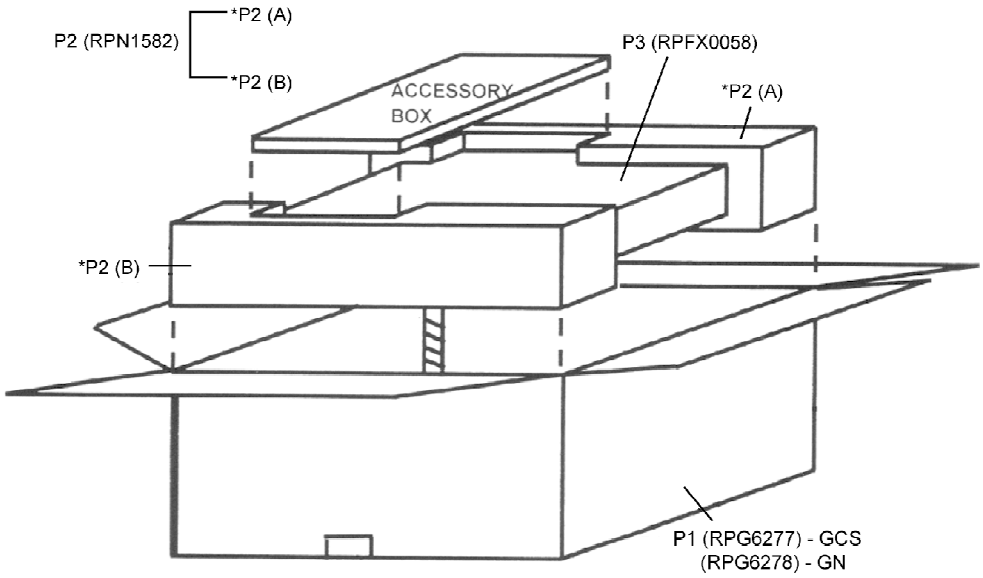
Ref. No.	Part No.	Part Name & Description	Remarks
C3503	ECJ1VF1H103Z	0.01 50V	[M]
C3504	ECJ1VB1H103K	0.01 50V	[M]
C3505	ECUV1C104KBV	0.1 16V	[M]
C3506	ECUV1C104KBV	0.1 16V	[M]
C3507	F1H0J1050013	1 6.3V	[M]
C3508	F1H0J1050013	1 6.3V	[M]
C3509	F2A0J102A247	1000P 6.3V	[M]
C3510	F2A1A101A206	100P 10V	[M]
C3511	F2A0J102A247	1000P 6.3V	[M]
C3512	F2A1A101A206	100P 10V	[M]
C3513	F2A0J102A247	1000P 6.3V	[M]
C3514	F2A1A101A206	100P 10V	[M]
C3515	F2A0J331A247	330P 6.3V	[M]
C3517	F2A0J331A247	330P 6.3V	[M]
C3522	ECEA0JKS220I	22 6.3V	[M]
C3531	ECJ1VB1H103K	0.01 50V	[M]
C4201	F2G0J331A015	330P 6.3V	[M]
C4202	F3F1A106A001	10 10V	[M]
C4206	F2G0J330A015	33P 6.3V	[M]
C4208	ECUVNC104ZFV	0.1 16V	[M]
C4209	ECUVNC104ZFV	0.1 16V	[M]
C4210	ECUVNC104ZFV	0.1 16V	[M]
C4312	F2A1A102A206	1000P 10V	[M]
C4313	ECJ1VF1C104Z	0.1 16V	[M]
C4314	ECJ1VF1C104Z	0.1 16V	[M]
C4315	ECJ1VF1C104Z	0.1 16V	[M]
C4323	F2A1H221A236	220P 50V	[M]
C4324	F2A1H221A236	220P 50V	[M]
C4336	ECJ1VC1H820J	82P 50V	[M]
C4337	ECJ1VC1H820J	82P 50V	[M]
C4339	ECJ1VF1C104Z	0.1 16V	[M]
C4340	F2A1H221A236	220P 50V	[M]
C4414	F2A1E470A205	47P 25V	[M]
C4415	F2A1E470A205	47P 25V	[M]
C4423	ECJ1VC1H102J	1000P 50V	[M]
C4427	ECJ1VC1H102J	1000P 50V	[M]
C4431	ECJ1VF1C104Z	0.1 16V	[M]
C4432	ECJ1VF1C104Z	0.1 16V	[M]
C4586	ECJ1VF1C104Z	0.1 16V	[M]
C4587	ECJ1VF1C104Z	0.1 16V	[M]
C4588	ECJ1VF1C104Z	0.1 16V	[M]
C4589	ECJ1VF1C104Z	0.1 16V	[M]
C4781	F2A0J470A179	47P 6.3V	[M]
C4782	ECJ1VF1C104Z	0.1 16V	[M]
C5101	ECJ1VF1C104Z	0.1 16V	[M]
C5102	ECJ1VF1C104Z	0.1 16V	[M]
C5103	F3F1A106A001	10 10V	[M]
C5110	ECEV0JA470WR	47 6.3V	[M]
C5111	ECEV0JA470WR	47 6.3V	[M]
C5115	ECEV0JA470WR	47 6.3V	[M]
C5201	ECUVNC104ZFV	0.1 16V	[M]
C5202	ECUVNC104ZFV	0.1 16V	[M]
C5203	ECUVNC104ZFV	0.1 16V	[M]
C5221	EEE0JA330WR	33P 6.3V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C5222	ECUVNC104ZFV	0.1 16V	[M]
C5223	EEE1EA4R7SR	4.7P 25V	[M]
C5225	ECUVNC104ZFV	0.1 16V	[M]
C5226	EEE1EA4R7SR	4.7P 25V	[M]
C5231	ECUV1C104KBV	0.1 16V	[M]
C5232	ECUV1C104KBV	0.1 16V	[M]
C6001	F2A0J221A245	220P 6.3V	[M]
C6002	ECJ1VF1C104Z	0.1 16V	[M]
C6004	F2A1H100A234	10P 50V	[M]
C6011	F2A0J221A245	220P 6.3V	[M]
C6012	ECJ1VF1C104Z	0.1 16V	[M]
C6031	ECJ1VF1H103Z	0.01 50V	[M]
C6032	ECJ1VF1H103Z	0.01 50V	[M]
C6033	ECJ1VF1H103Z	0.01 50V	[M]
C6041	ECJ1VC1H331K	330P 50V	[M]
C6042	ECJ1VC1H331K	330P 50V	[M]
C6061	F2A1E470A205	47P 25V	[M]
C6062	ECJ1VF1C104Z	0.1 16V	[M]
C6063	F2A1E470A205	47P 25V	[M]
C6064	ECJ1VF1C104Z	0.1 16V	[M]
C6201	ECUVNC104ZFV	0.1 16V	[M]
C6202	ECJ1VC1H101J	100P 50V	[M]
C6251	ECUV1C104KBV	0.1 16V	[M]
C6252	F1H0J1050013	1 6.3V	[M]
C6253	ECJ1VB1C103K	0.01 16V	[M]
C6255	EEE0JA101SP	100P 6.3V	[M]
C6261	ECUVNC104ZFV	0.1 16V	[M]
C6262	ECUVNC104ZFV	0.1 16V	[M]
C6301	ECUVNC104ZFV	0.1 16V	[M]
C6302	ECUVNC104ZFV	0.1 16V	[M]
C6311	ECUVNC104ZFV	0.1 16V	[M]
C6312	ECUVNC104ZFV	0.1 16V	[M]
C6351	ECUVNC104ZFV	0.1 16V	[M]
C6401	F2A0J470A245	47P 6.3V	[M]
C6405	ECBT1H103ZF5	0.01 50V	[M]
C6561	EEE0JA330WR	33P 6.3V	[M]
C6562	EEE0JA330WR	33P 6.3V	[M]
C6563	ECUVNC104ZFV	0.1 16V	[M]
C6564	ECUVNC104ZFV	0.1 16V	[M]
C6565	ECJ1VC1H150J	15P 50V	[M]
C6566	ECJ1VC1H150J	15P 50V	[M]
C6567	ECUVNC104ZFV	0.1 16V	[M]
C6568	ECJ1VC1H150J	15P 50V	[M]

23.3. Packing Materials & Accessories Parts List

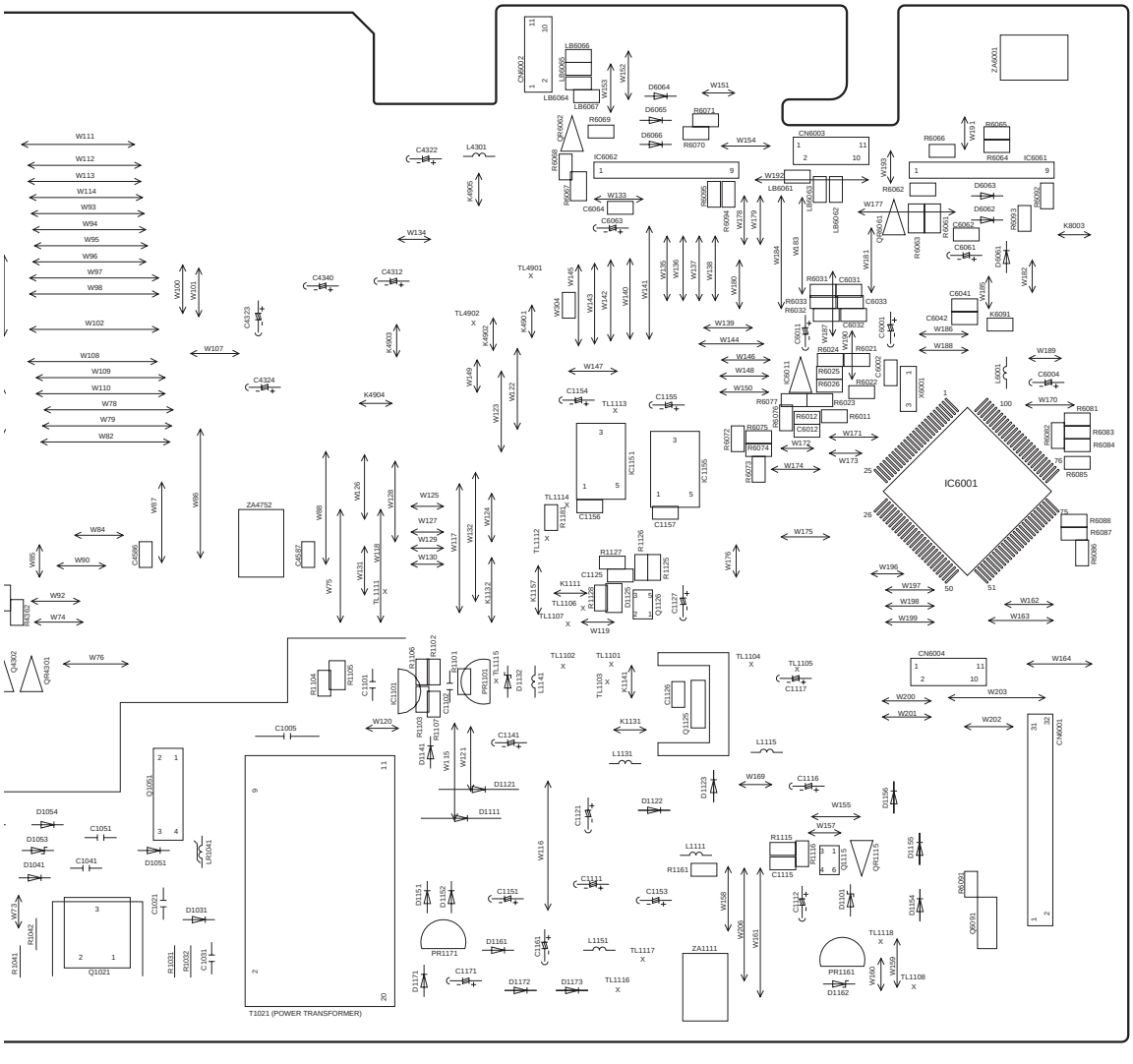
Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG6277	PACKING CASE	[M]GCS
P1	RPG6278	PACKING CASE	[M]GN
P2	RPN1582	POLYFOAM	[M]
P3	RPFX0058	MIRAMAT SHEET	[M]
		ACCESSORIES	
A1	N2QAJB000071	REMOTE CONTROL	[M]
A1-1	RKK-HTR0283G	R/C BATTERY COVER	[M]
A2	RJA0019-2X	AC CORD (SF)	[M]GCS ⚠
A2	RJA0035-X	AC CORD (SF)	[M]GN ⚠
A3	RQT6726-P	O/I BOOK (En/Sp)	[M]
A3	RQT6731-K	O/I BOOK (Co)	[M]GCS
A4	K2KA6CA00001	A/V CORD	[M]

23.4. Packaging

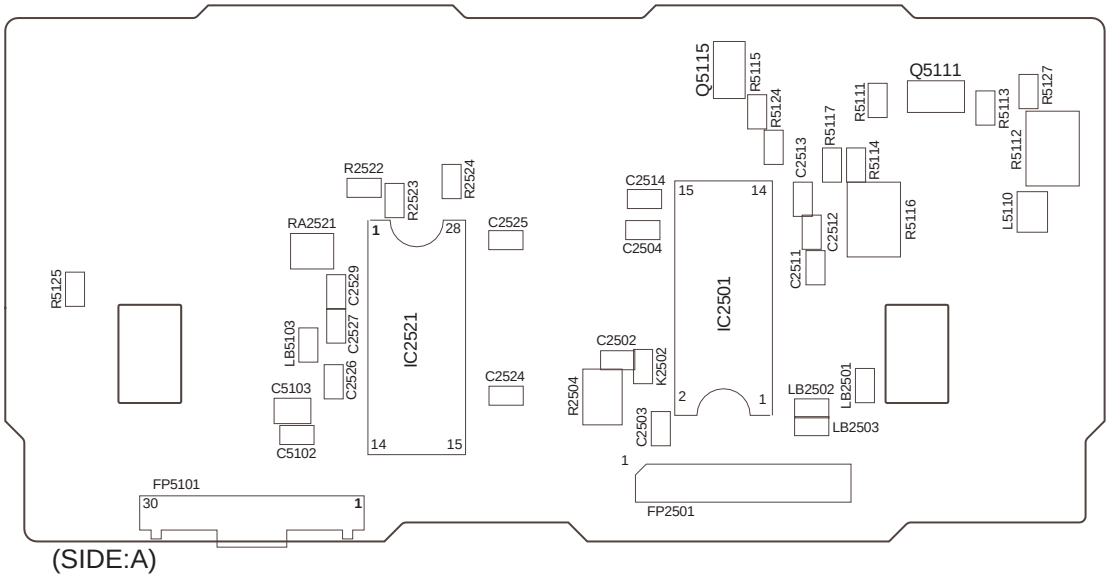


PRT0306 D/K/J/N/L

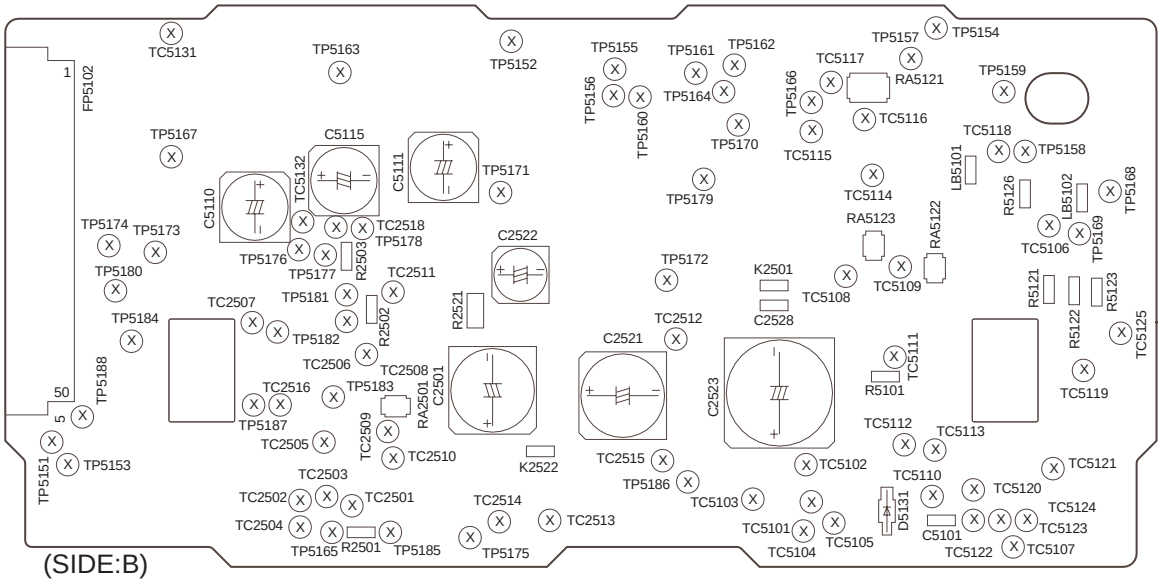
G H I J K L M

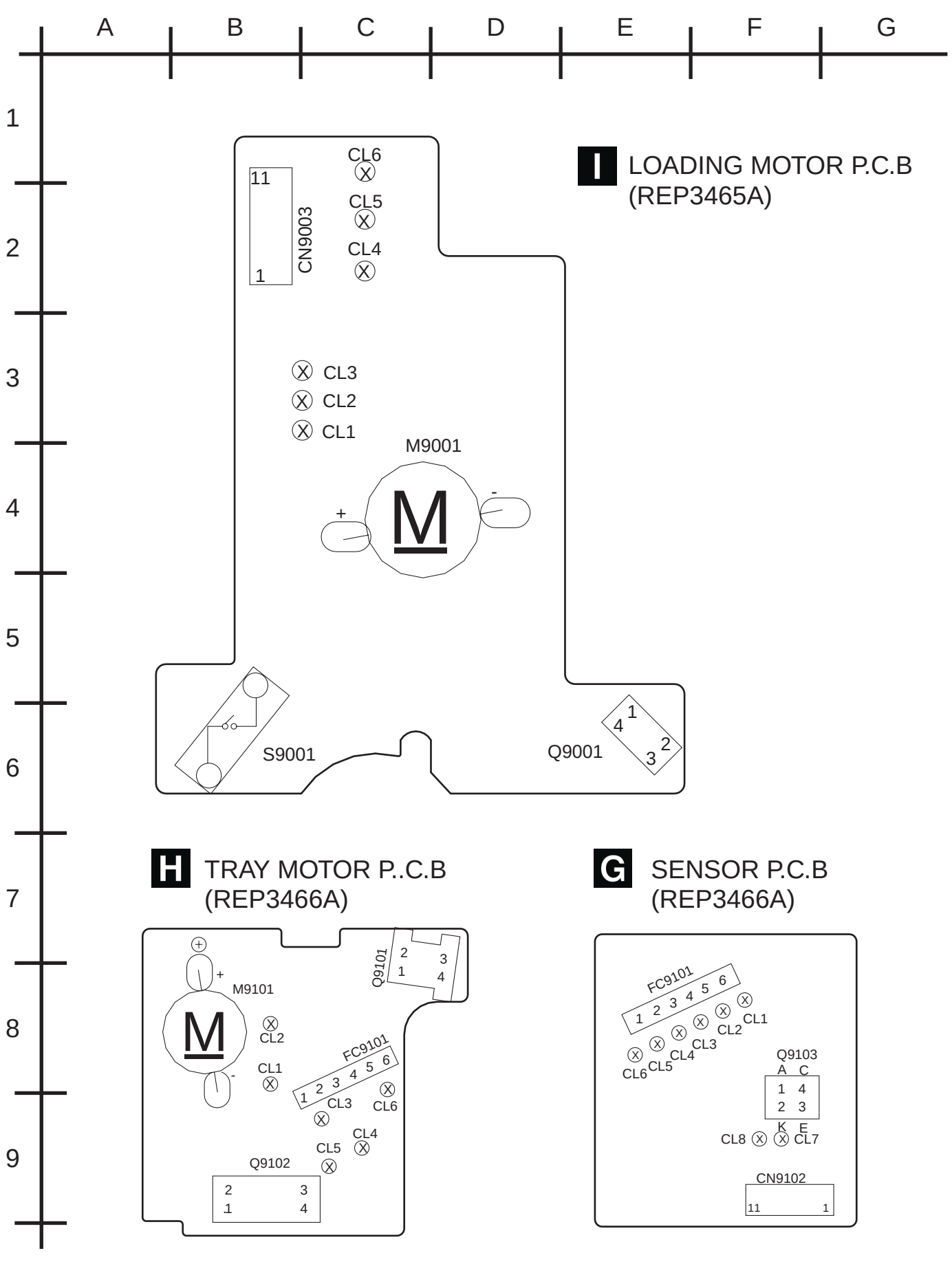


A DVD MODULE (1) P.C.B (REP3451A-N)



A DVD MODULE (1) P.C.B (REP3451A-N)

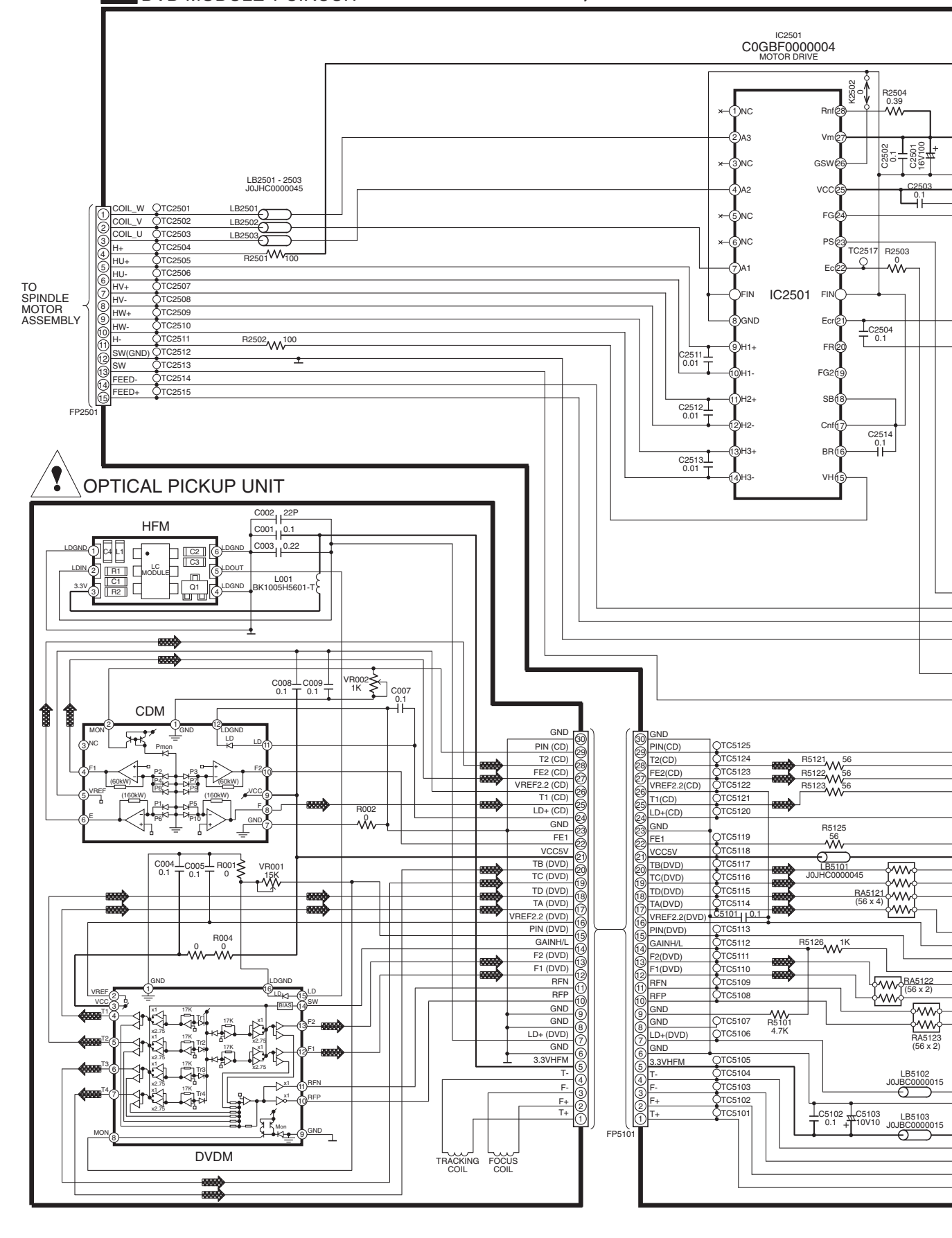



A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
I LOADING MOTOR P.C.B
(REP3465A)
CL6
CL5
CL4
11
CN9003
1
CL3
CL2
CL1
M9001
+
M
-
S9001
Q9001
4
1
3
2
H TRAY MOTOR P..C.B
(REP3466A)
+
M9101
M
-
CL2
CL1
Q9101
2
1
3
4
FC9101
1 2 3 4 5 6
CL3
CL6
CL4
CL5
Q9102
2
1
3
4
G SENSOR P.C.B
(REP3466A)
FC9101
1 2 3 4 5 6
CL1
CL2
CL3
CL4
CL5
CL6
Q9103
A C
1 4
2 3
K E
CL8
CL7
CN9102
11
1

SCHEMATIC DIAGRAM - 1

A DVD MODULE 1 CIRCUIT

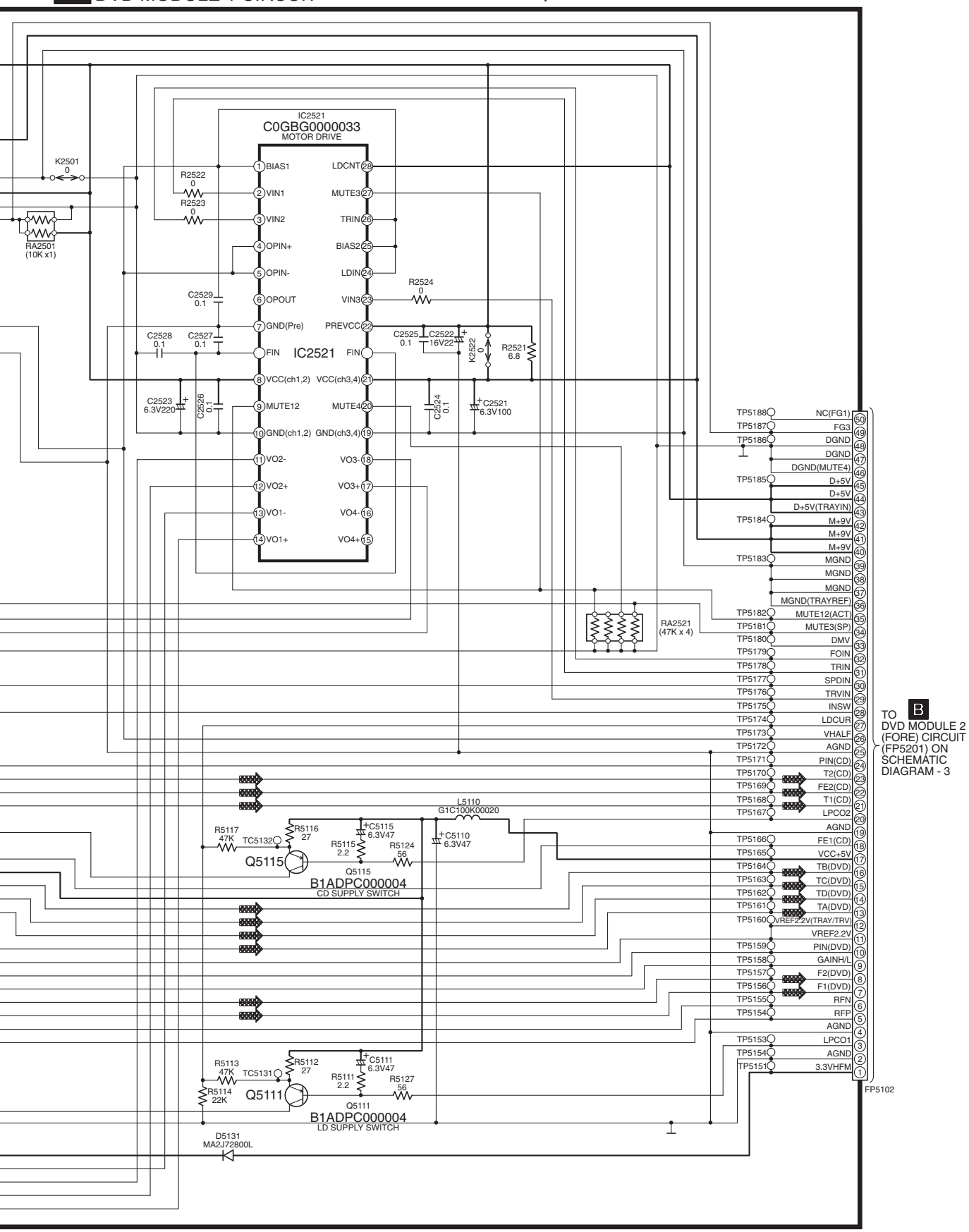
: +B SIGNAL LINE : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM - 2

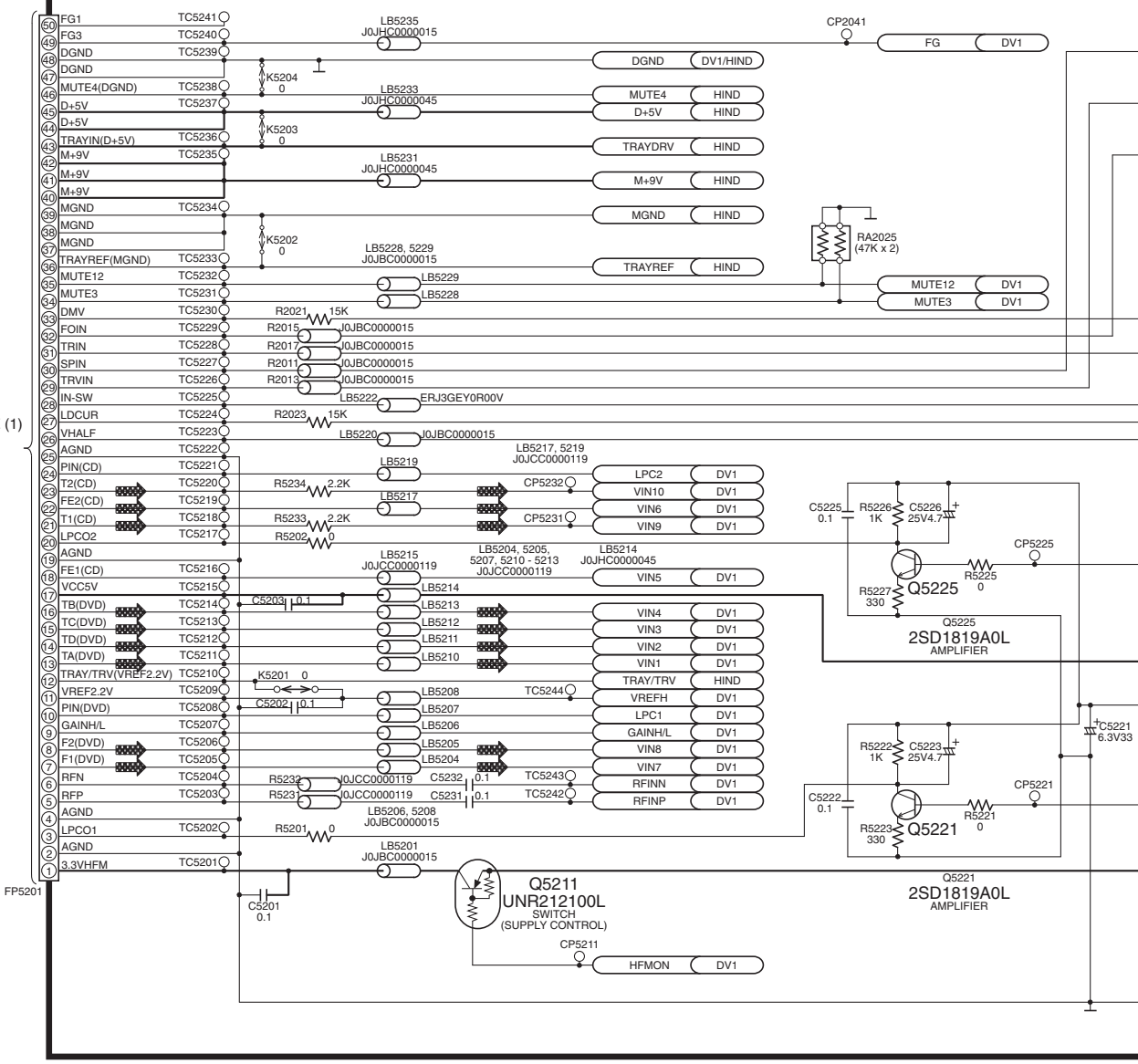
A DVD MODULE 1 CIRCUIT

——— : +B SIGNAL LINE ▰▰▰ : CD-DA SIGNAL LINE



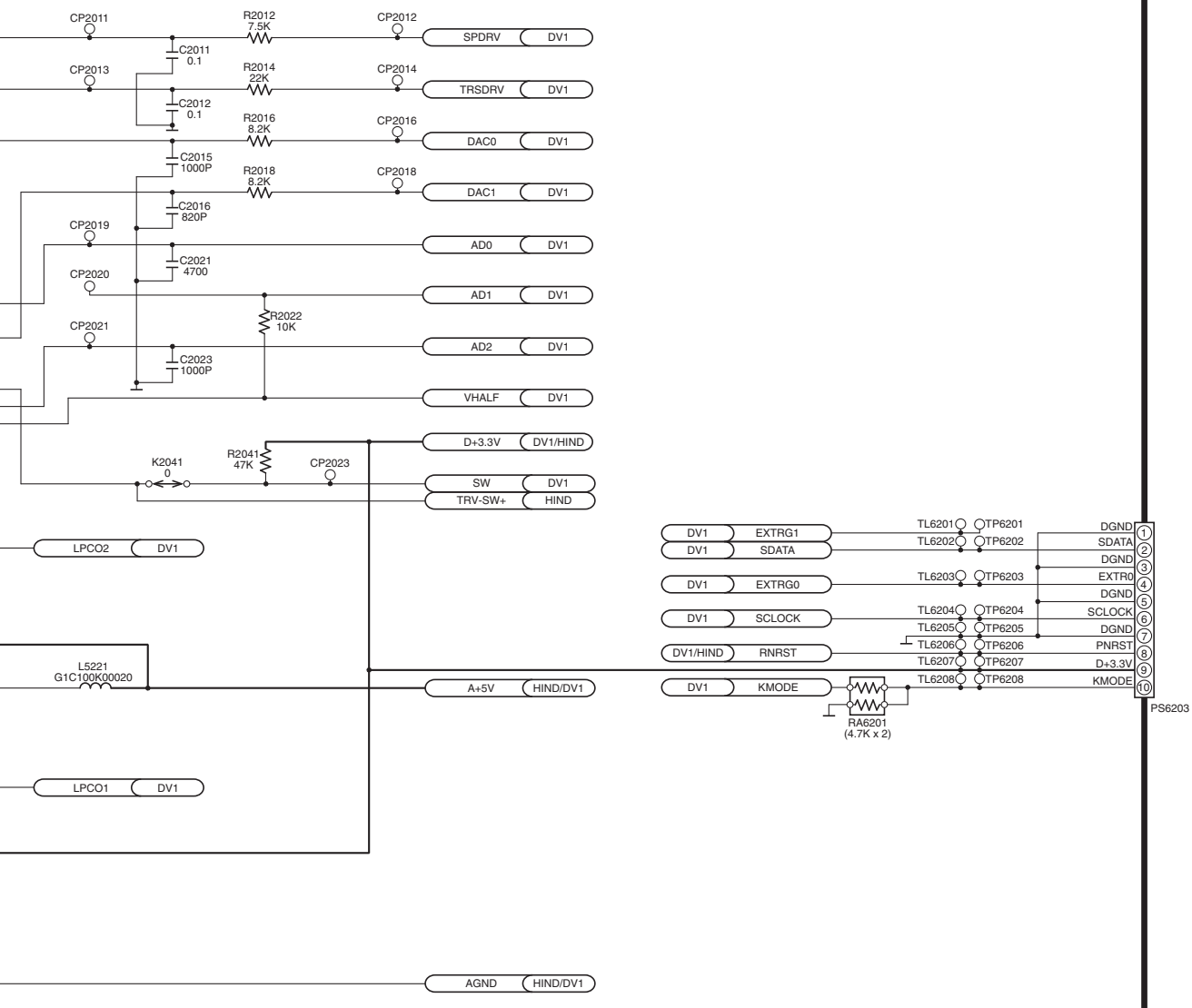
B DVD MODULE 2 (FORE) CIRCUIT

——— : +B SIGNAL LINE ▰▰▰ : CD-DA SIGNAL LINE



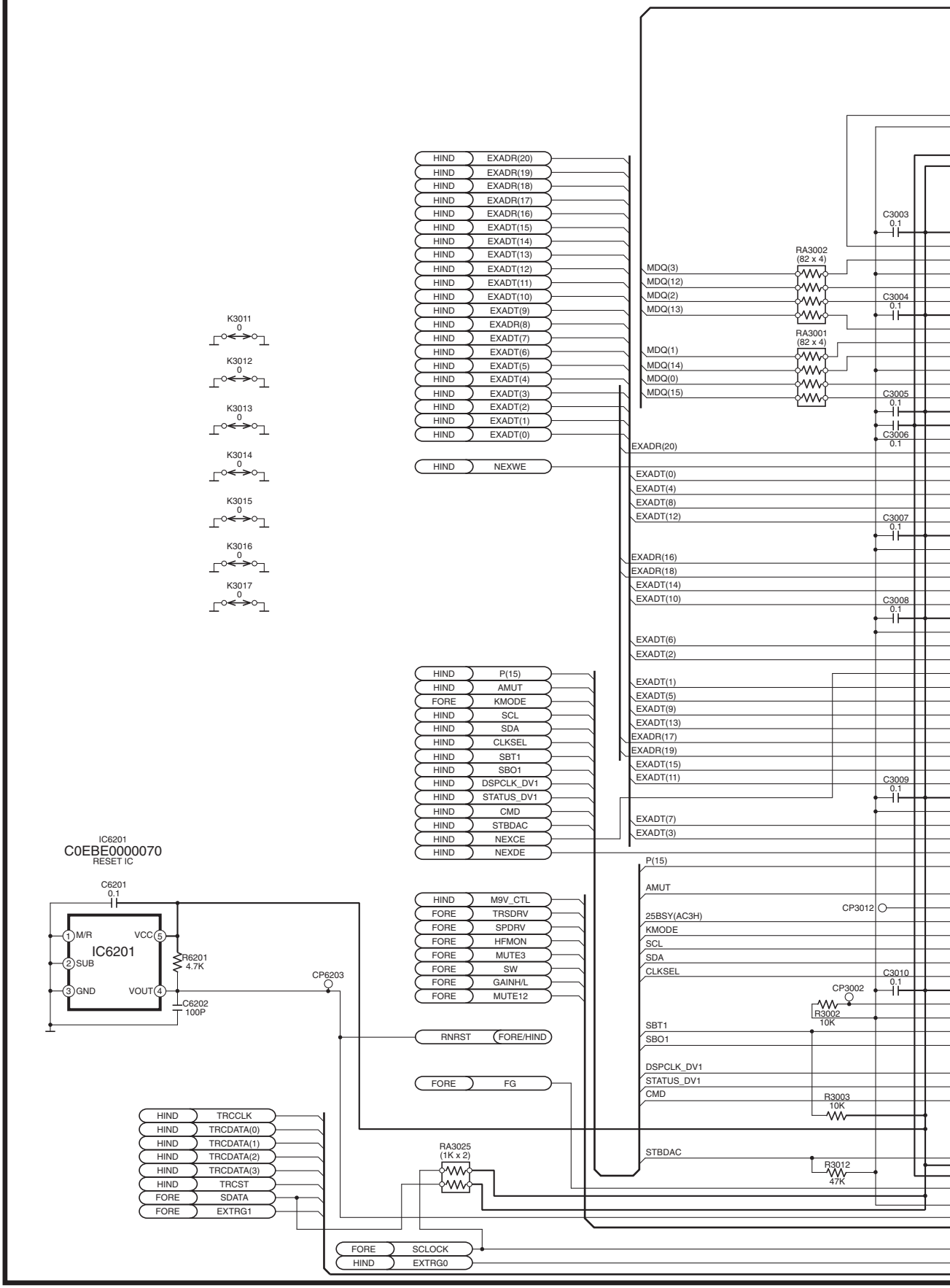
B DVD MODULE 2 (FORE) CIRCUIT

——— : +B SIGNAL LINE



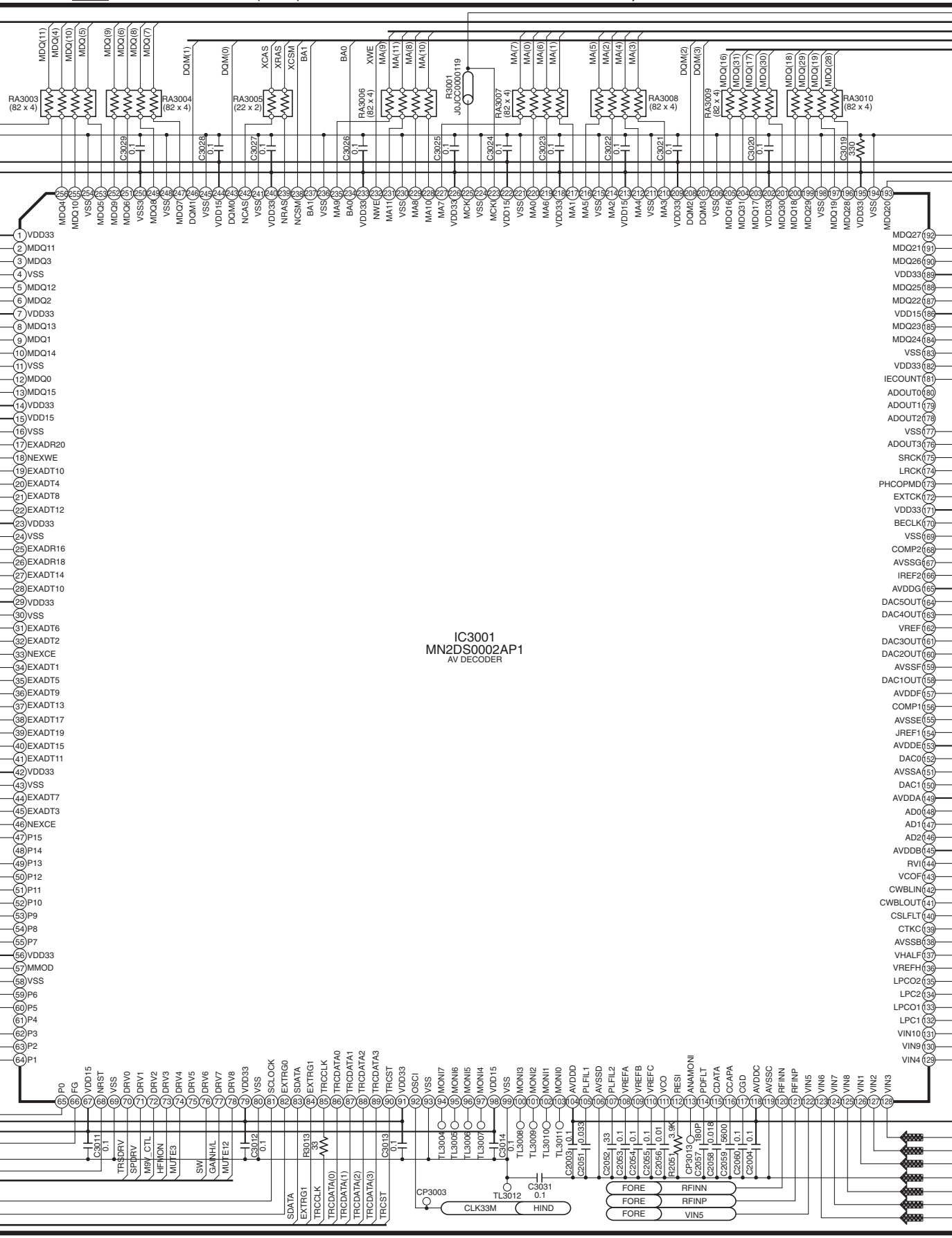
B DVD MODULE 2 (DV1) CIRCUIT

——— : +B SIGNAL LINE



B DVD MODULE 2 (DV1) CIRCUIT

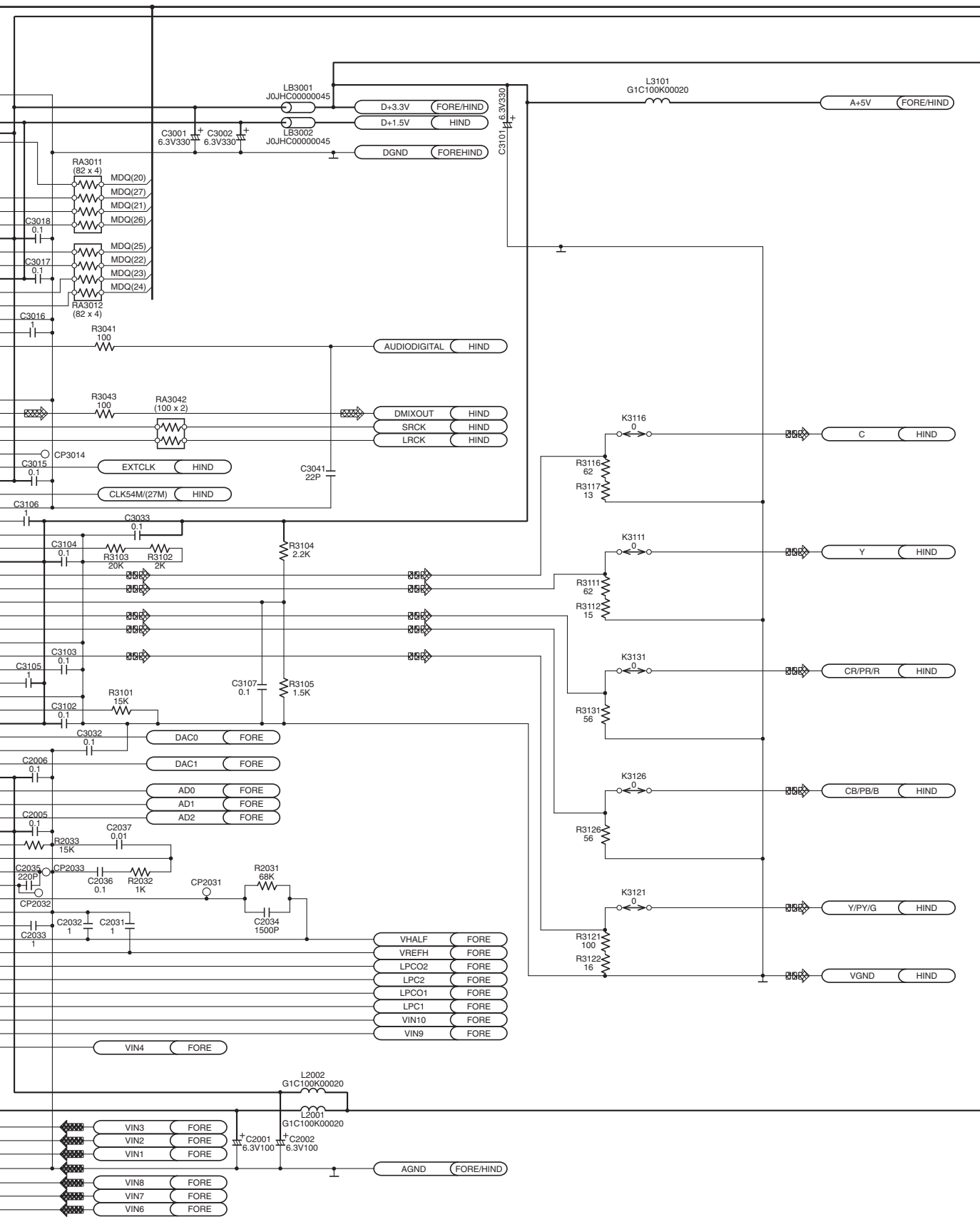
: +B SIGNAL LINE : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM - 7

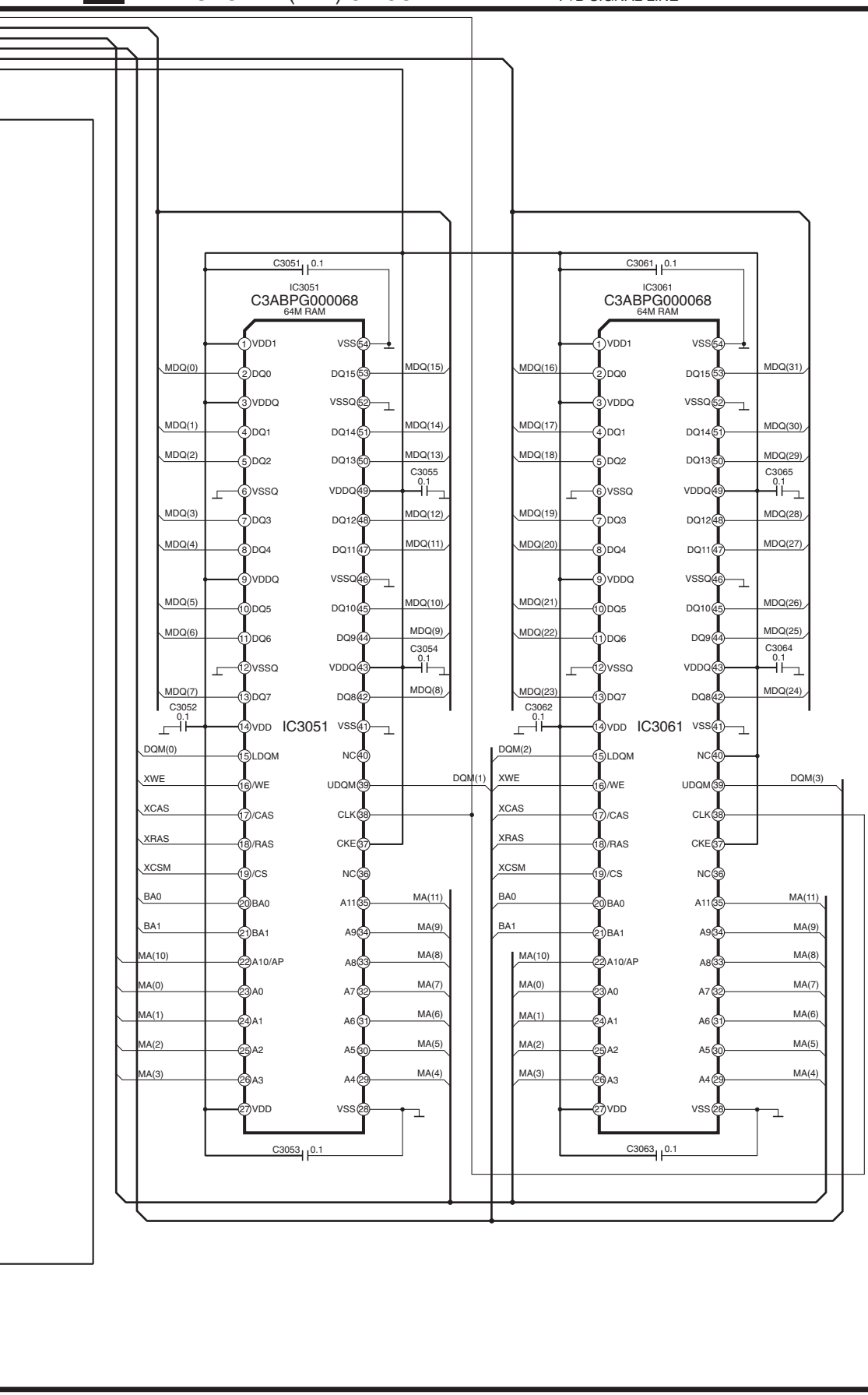
B DVD MODULE 2 (DV1) CIRCUIT

: CD-DA SIGNAL LINE
: +B SIGNAL LINE
: DVD (AUDIO) SIGNAL LINE
: DVD (VIDEO) SIGNAL LINE



B DVD MODULE 2 (DV1) CIRCUIT

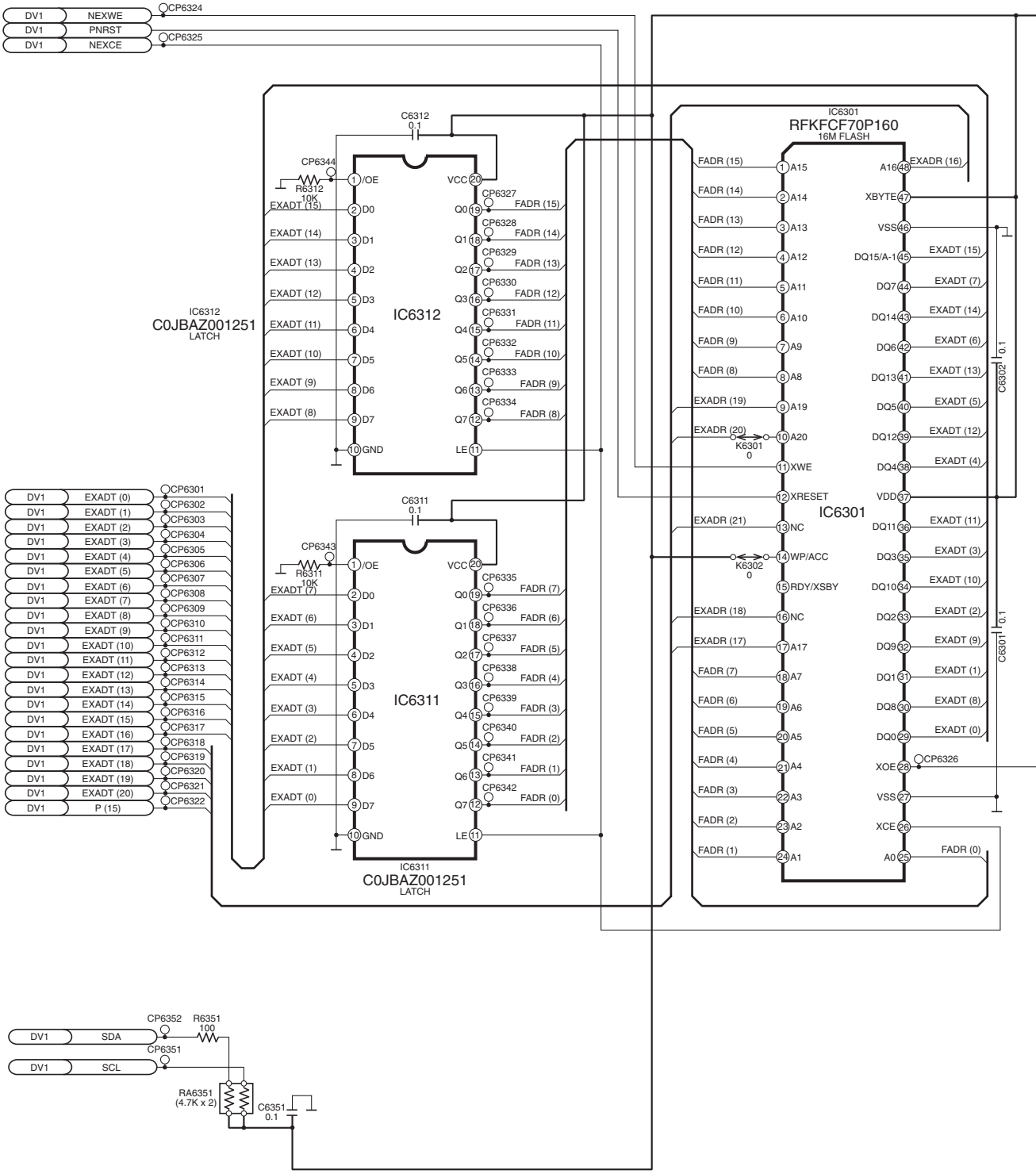
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM - 9

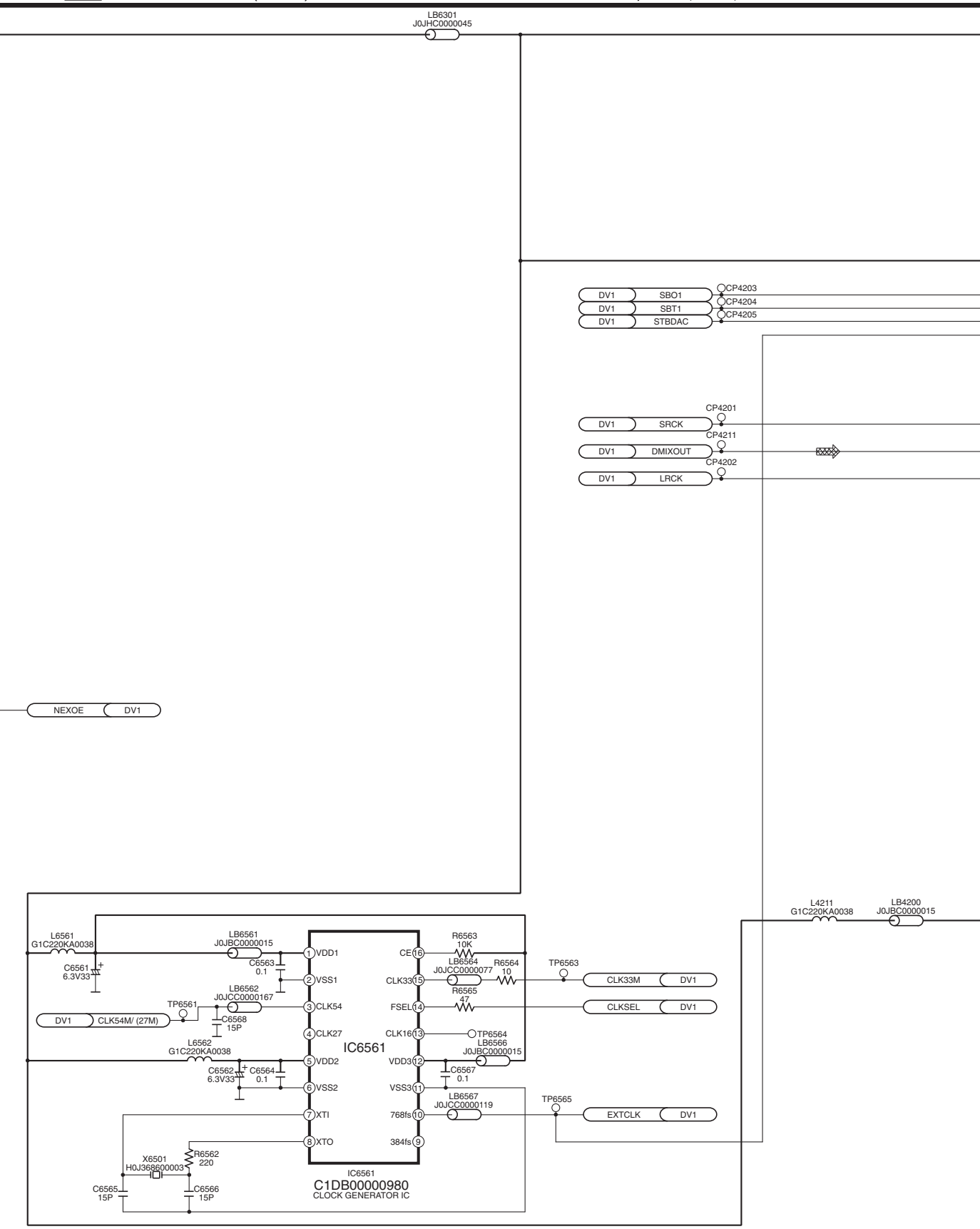
B DVD MODULE 2 (HIND) CIRCUIT

——— : +B SIGNAL LINE



B DVD MODULE 2 (HIND) CIRCUIT

: +B SIGNAL LINE : DVD (AUDIO) SIGNAL LINE

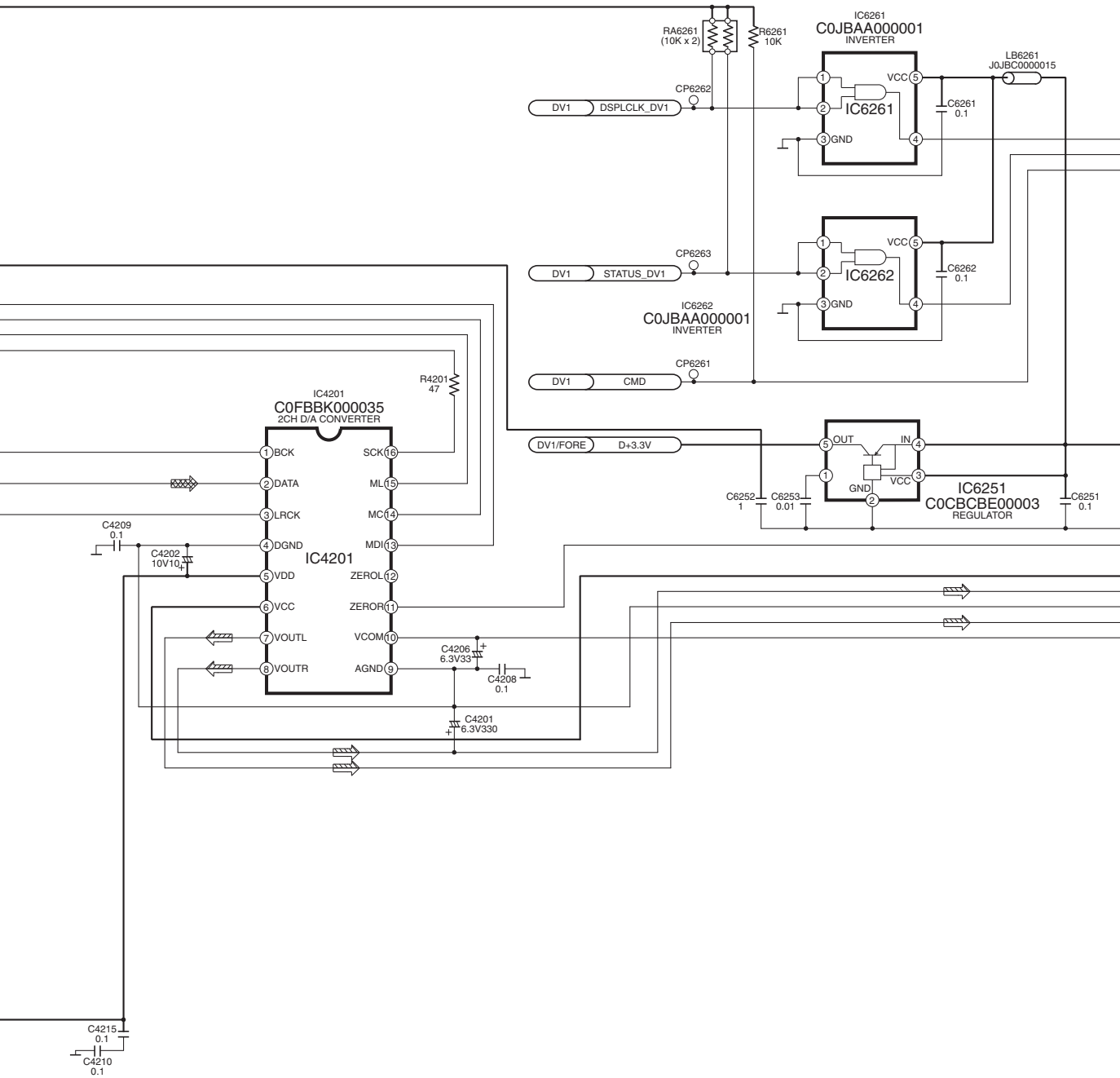


B DVD MODULE 2 (HIND) CIRCUIT

: +B SIGNAL LINE

: DVD (AUDIO) SIGNAL LINE

: MAIN SIGNAL LINE

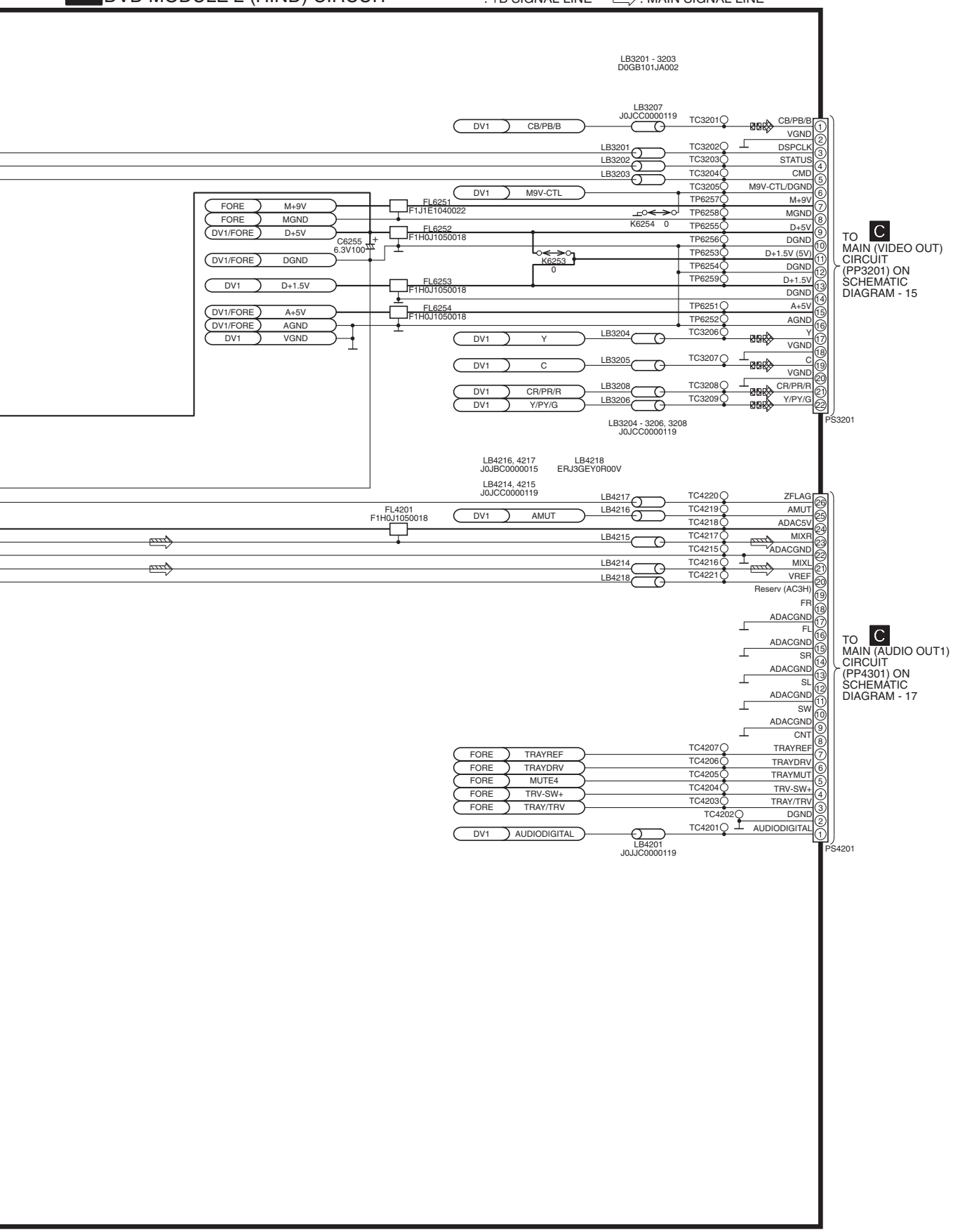


B DVD MODULE 2 (HIND) CIRCUIT

: +B SIGNAL LINE

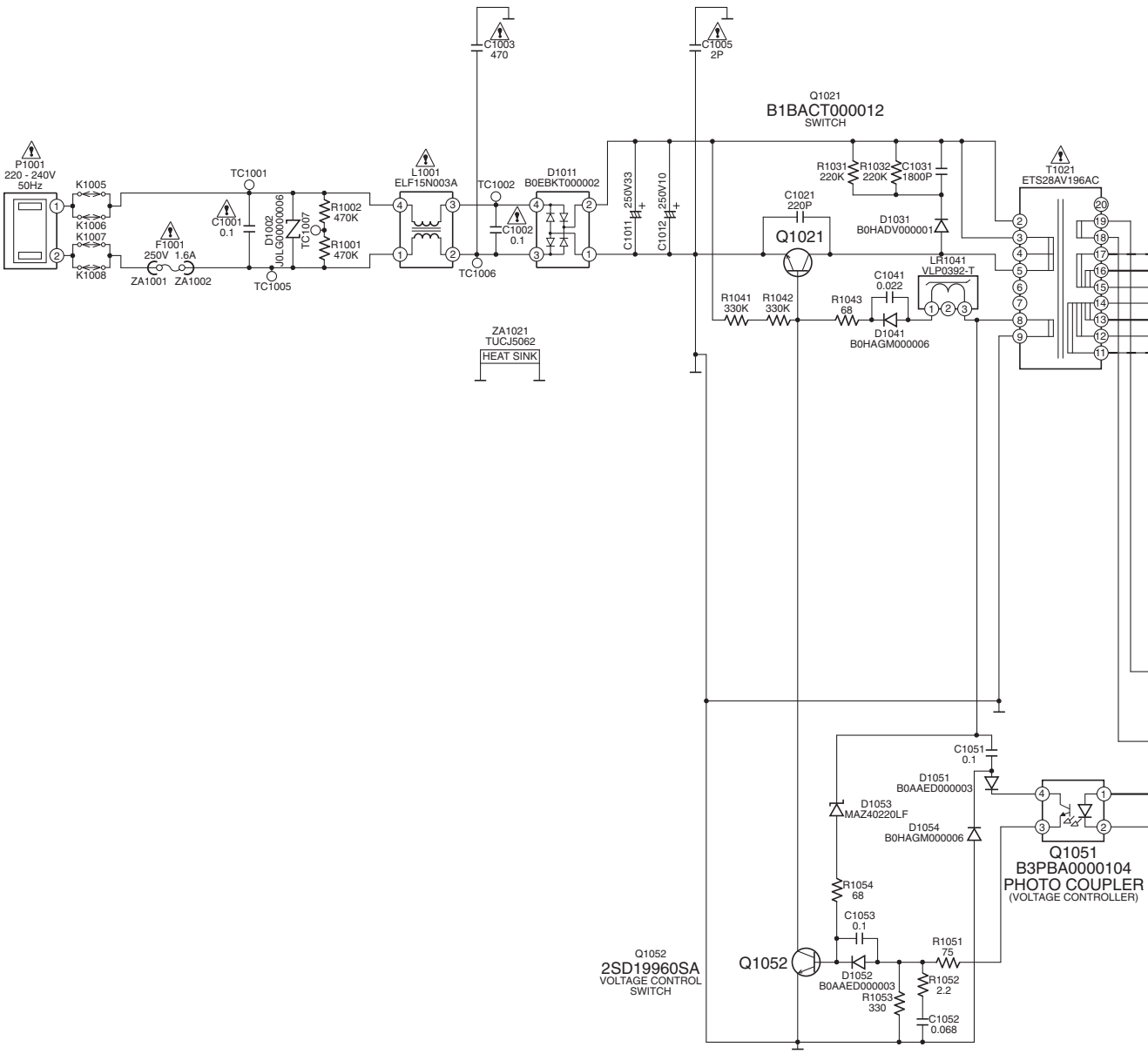
: DVD (VIDEO) SIGNAL LINE

: MAIN SIGNAL LINE



C MAIN (POWER) CIRCUIT

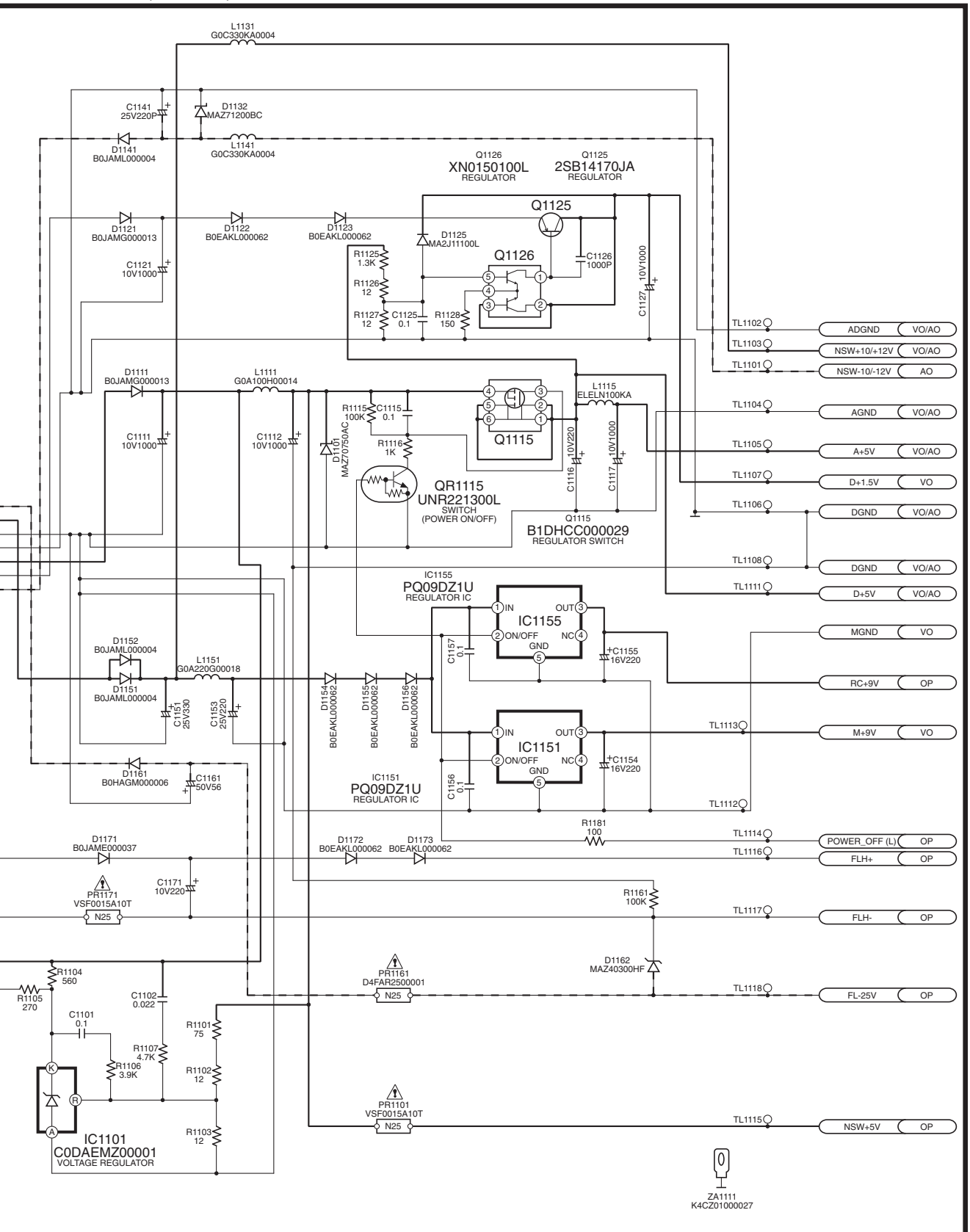
—— : +B SIGNAL LINE – – – : -B SIGNAL LINE



SCHEMATIC DIAGRAM - 14

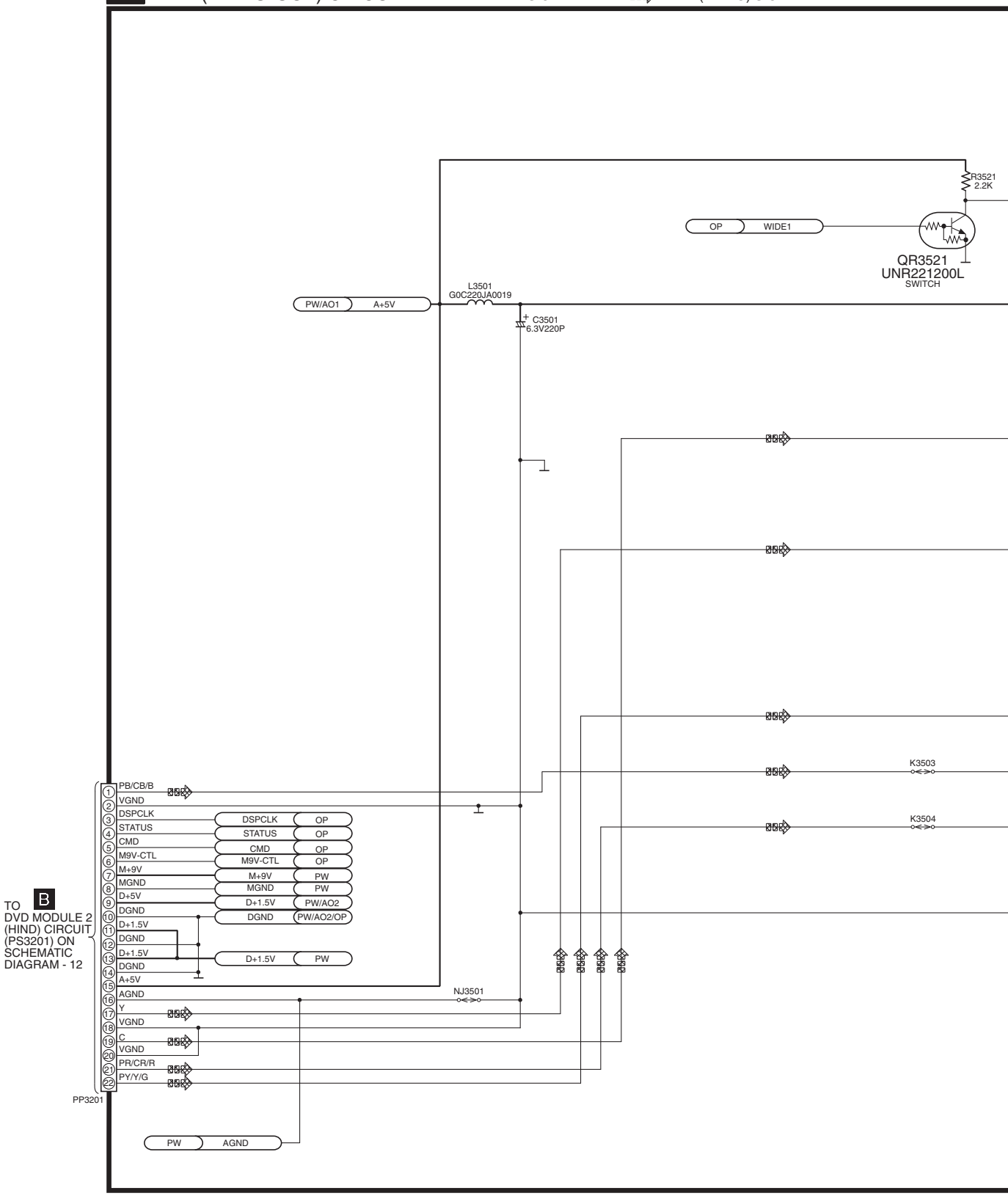
C MAIN (POWER) CIRCUIT

—— : +B SIGNAL LINE – – – : -B SIGNAL LINE



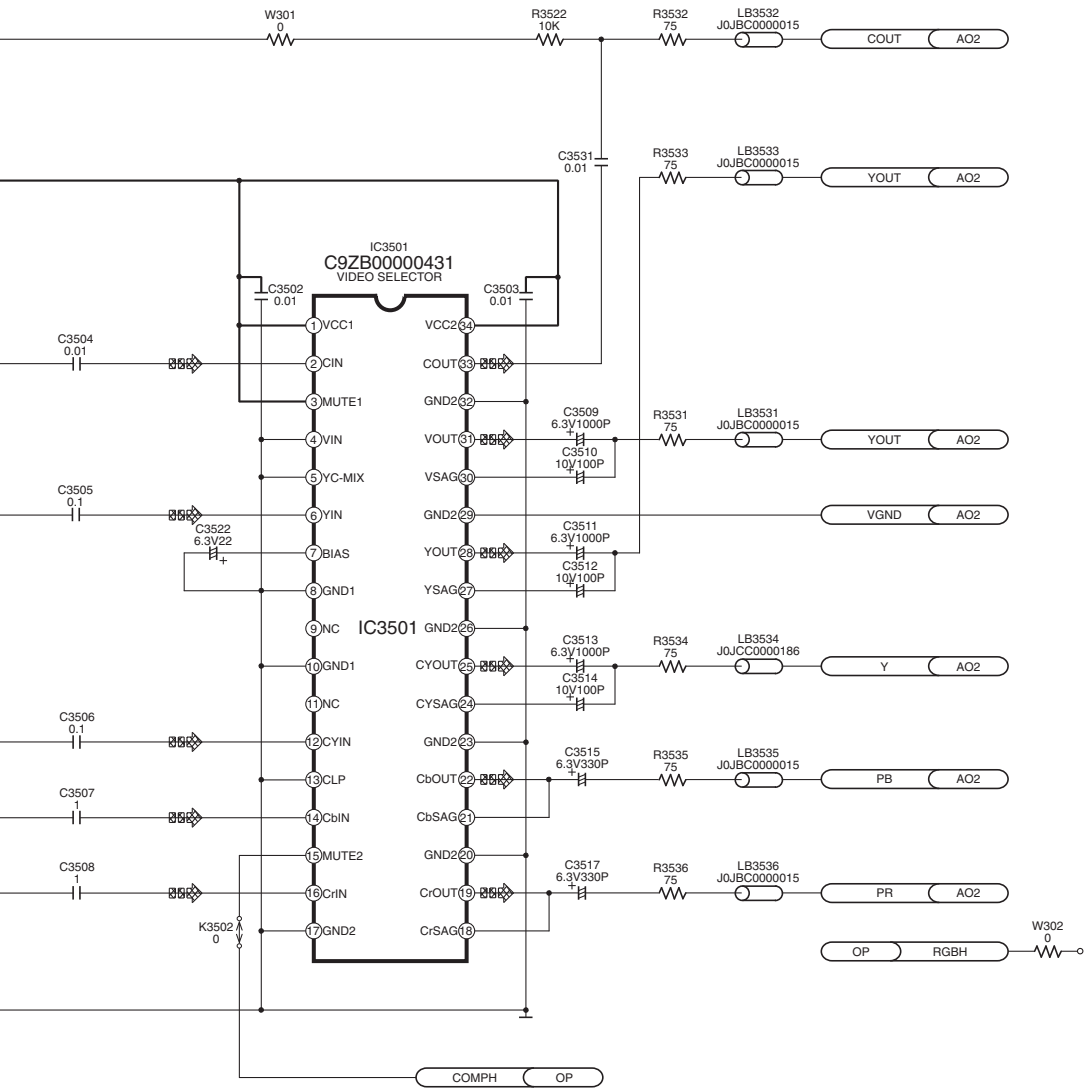
C MAIN (VIDEO-OUT) CIRCUIT

——— : +B SIGNAL LINE ⋙ : DVD (VIDEO) SIGNAL LINE



C MAIN (VIDEO-OUT) CIRCUIT

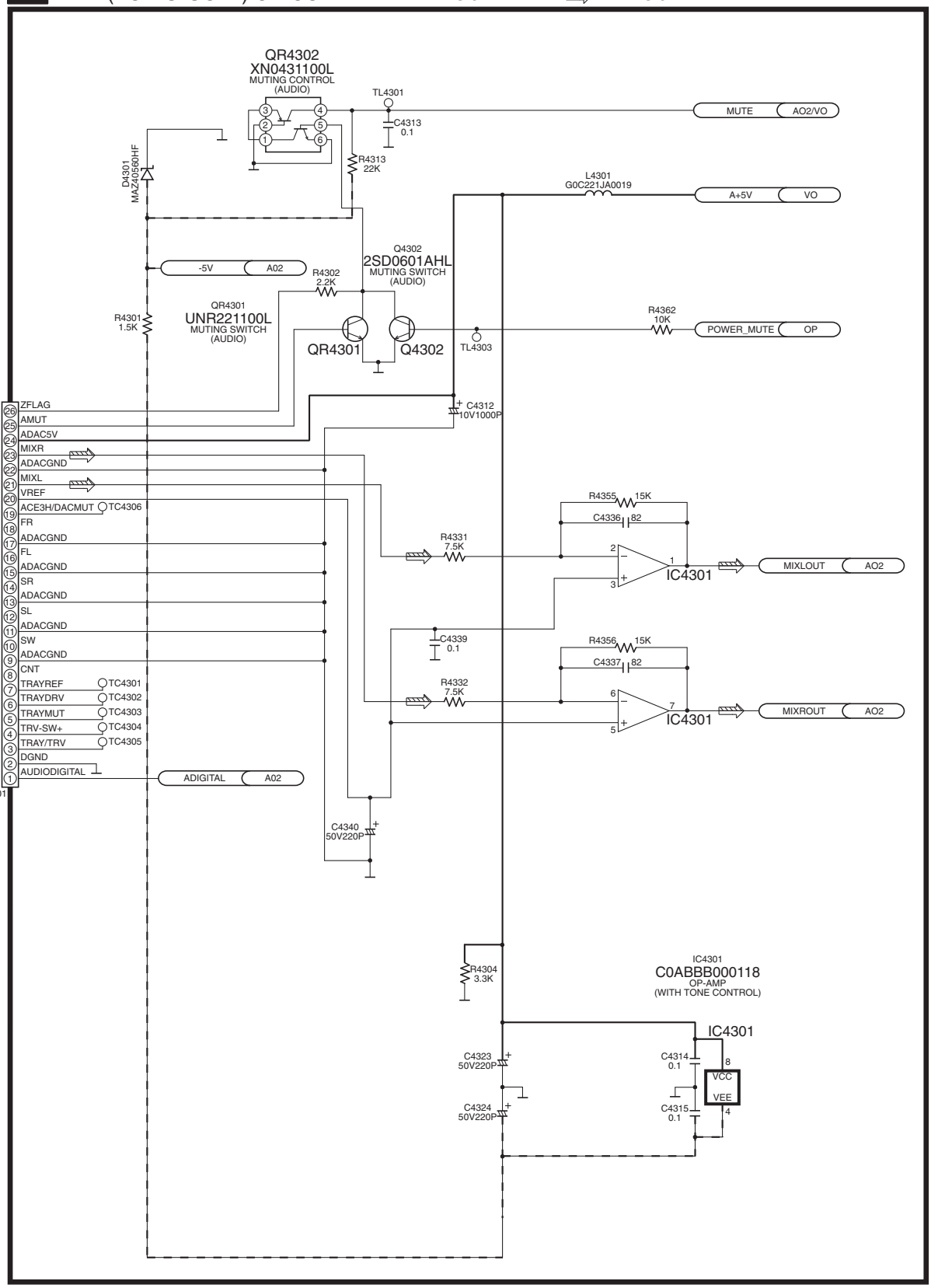
——— : +B SIGNAL LINE ▨ : DVD (VIDEO) SIGNAL LINE



SCHEMATIC DIAGRAM - 17

C MAIN (AUDIO-OUT1) CIRCUIT

- - - - : -B SIGNAL LINE
——— : +B SIGNAL LINE
⇨ : MAIN SIGNAL LINE



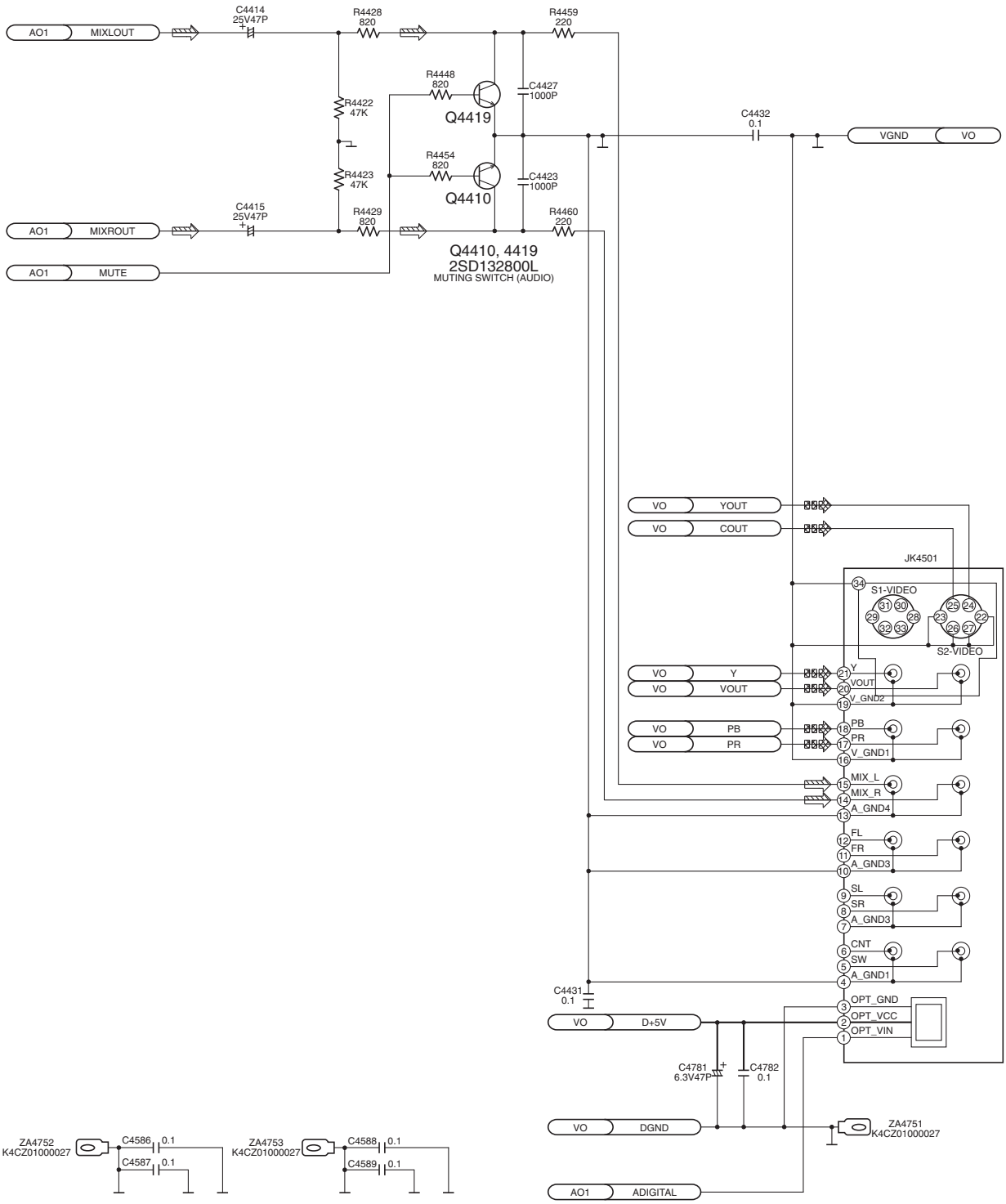
SCHEMATIC DIAGRAM - 18

C MAIN (AUDIO-OUT 2) CIRCUIT

: +B SIGNAL LINE

: DVD (VIDEO) SIGNAL LINE

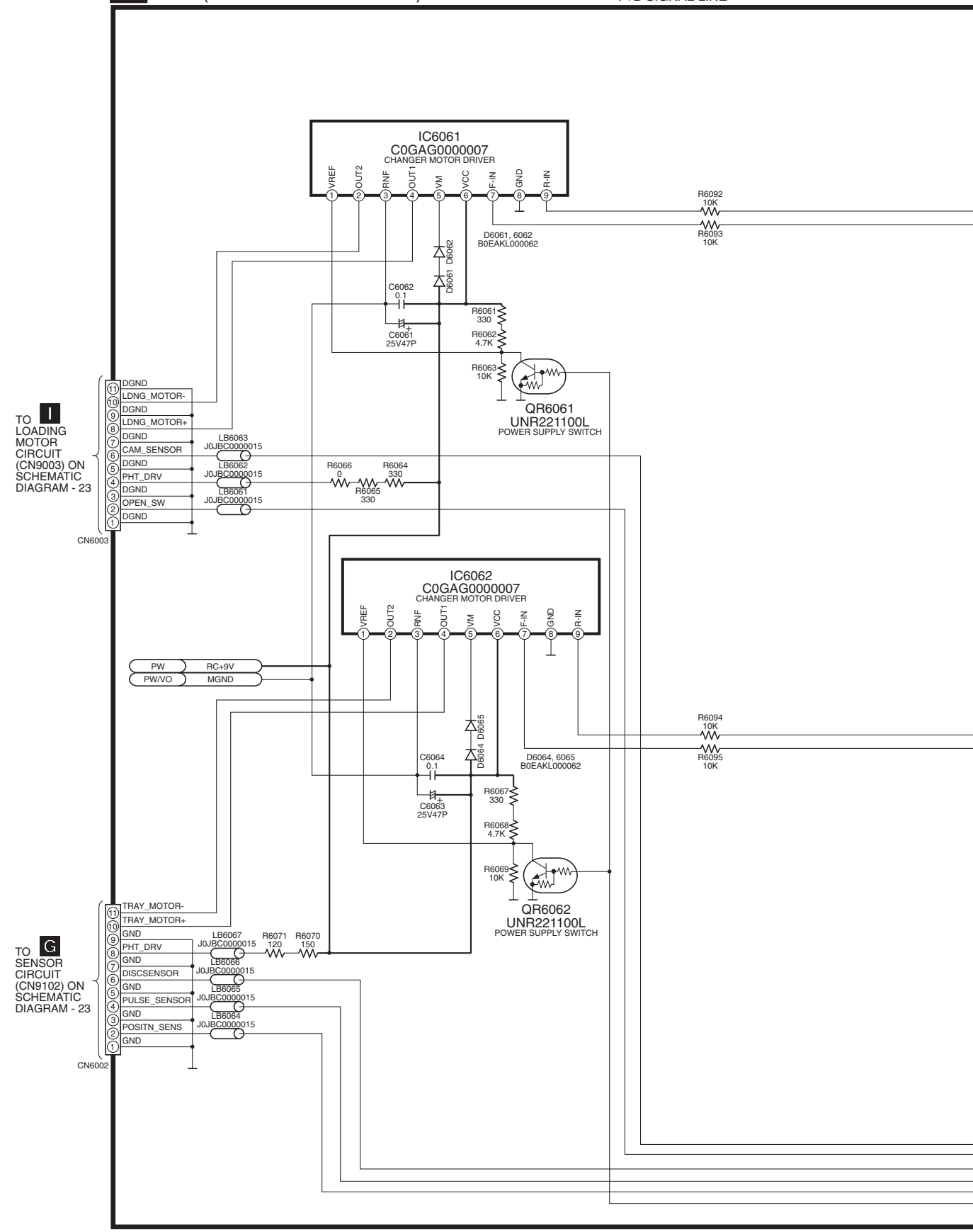
: MAIN SIGNAL LINE



SCHEMATIC DIAGRAM - 19

C MAIN (OPERATION CONTROL) CIRCUIT

—— : +B SIGNAL LINE

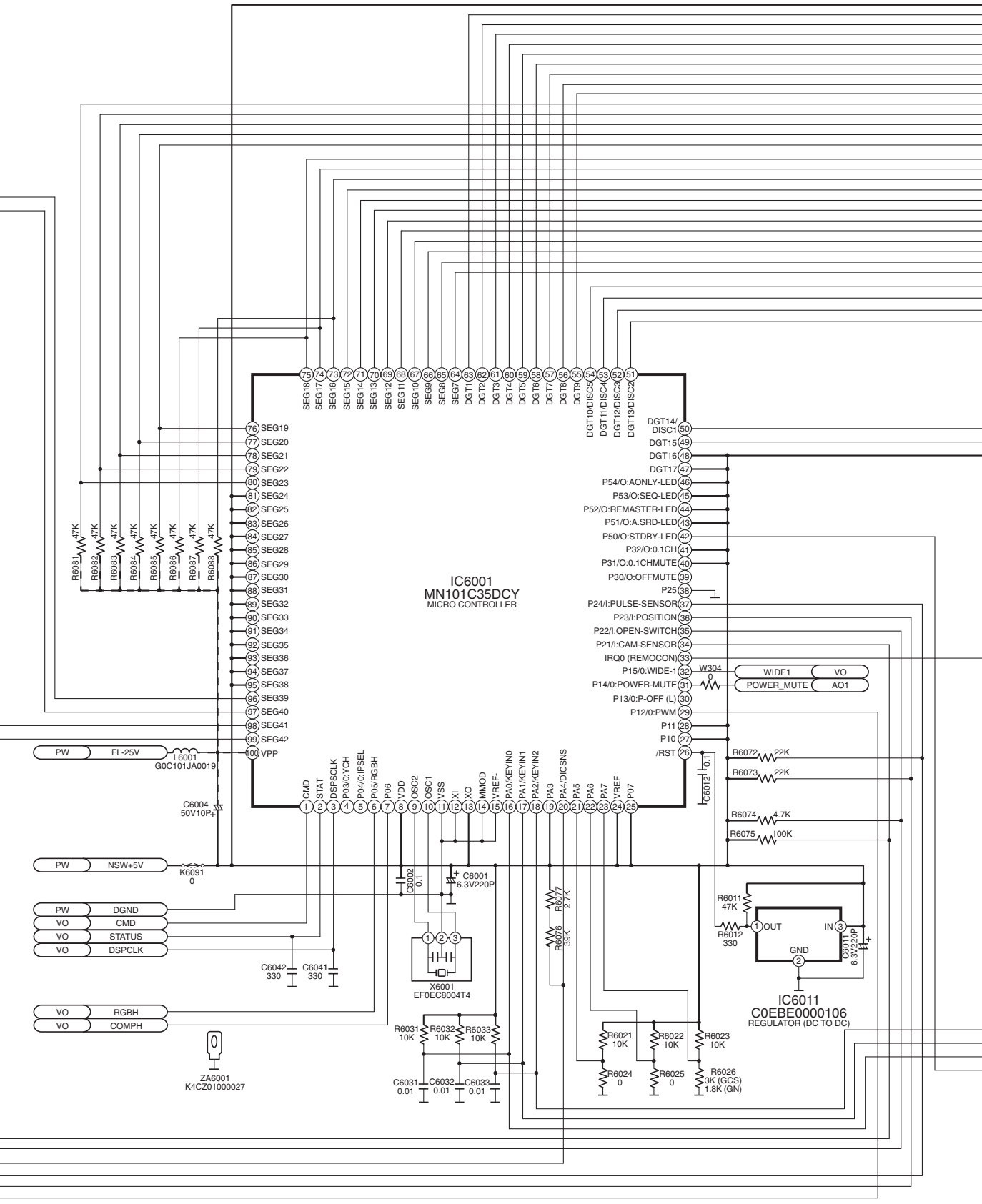


SCHEMATIC DIAGRAM - 20

C MAIN (OPERATION CONTROL) CIRCUIT

– – – : -B SIGNAL LINE

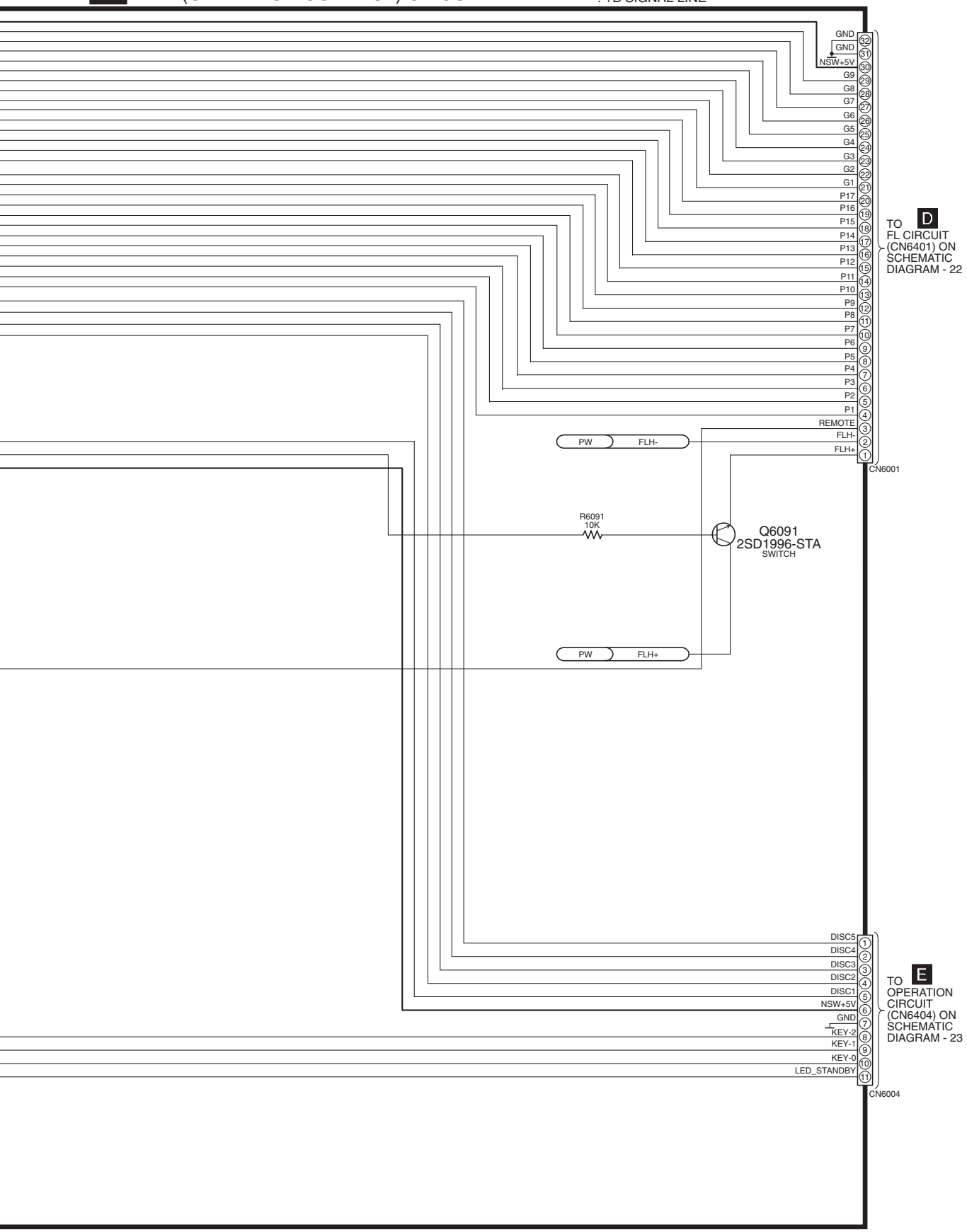
——— : +B SIGNAL LINE



SCHEMATIC DIAGRAM - 21

C MAIN (OPERATION CONTROL) CIRCUIT

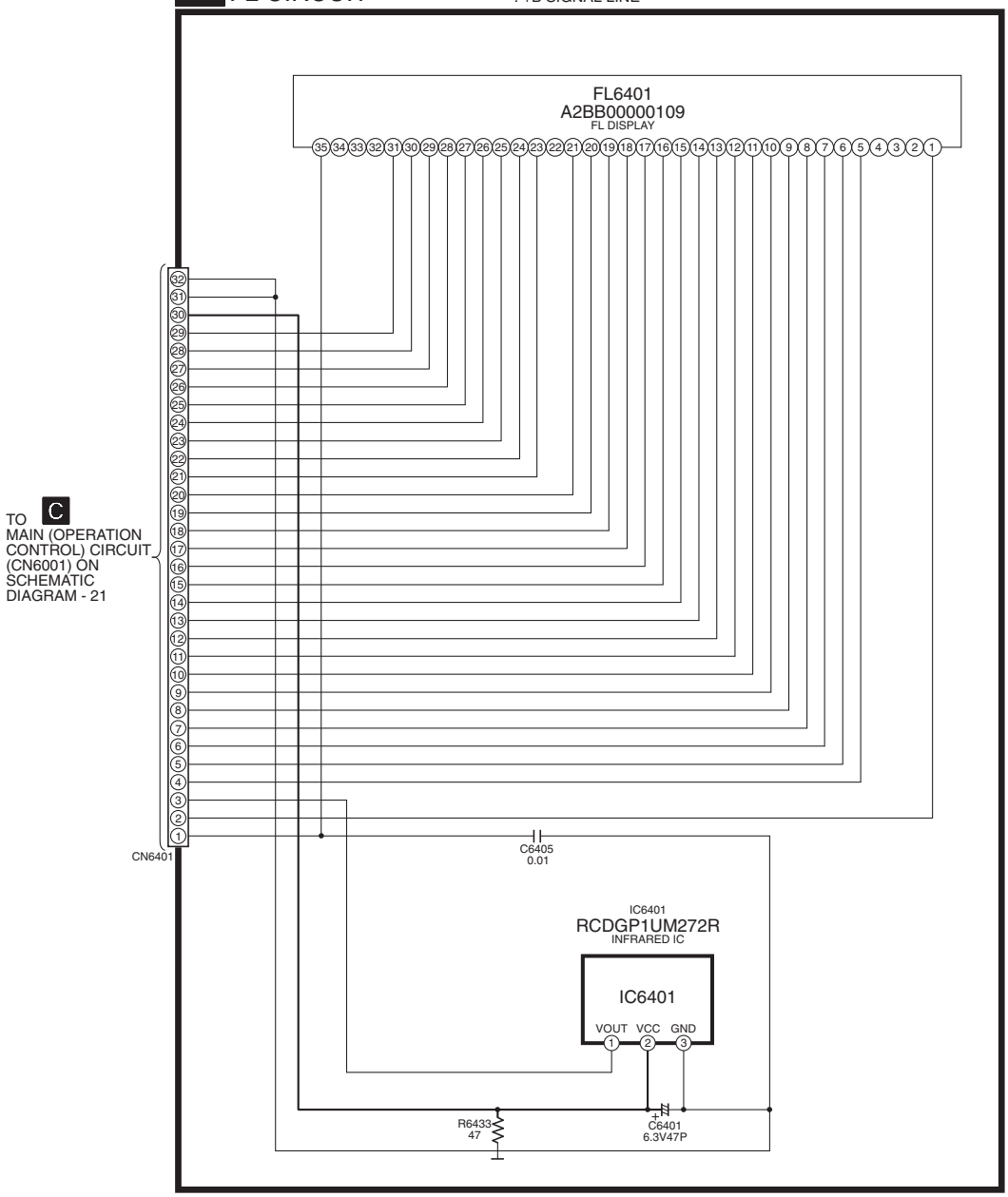
—— : +B SIGNAL LINE



SCHEMATIC DIAGRAM - 22

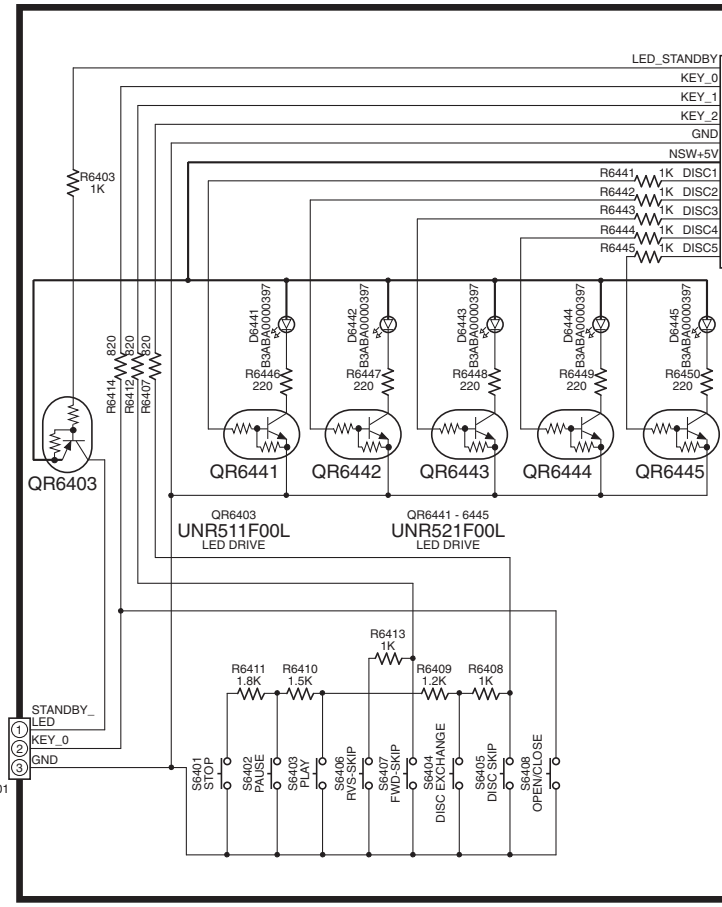
D FL CIRCUIT

——— : +B SIGNAL LINE

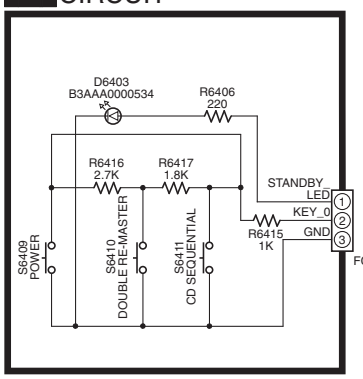


E OPERATION CIRCUIT

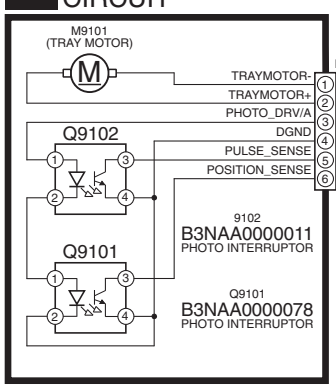
——— : +B SIGNAL LINE



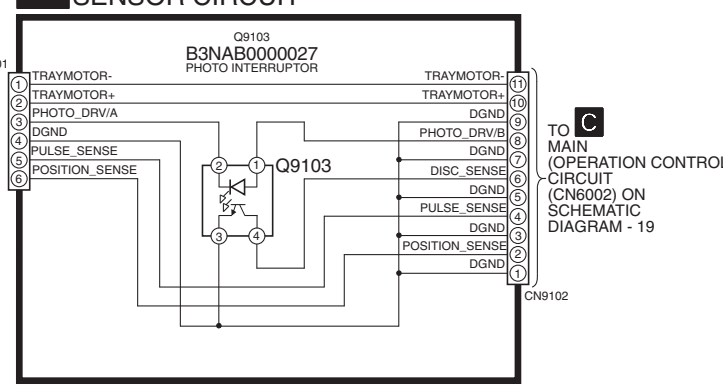
F POWER SWITCH CIRCUIT



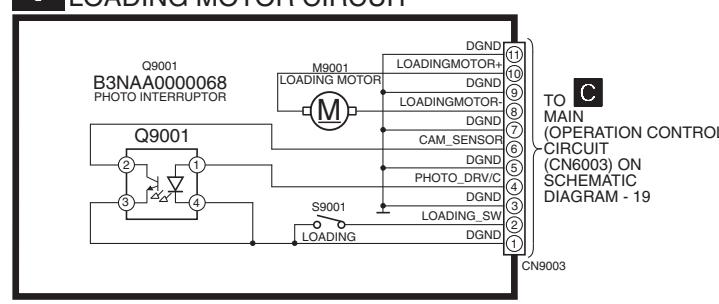
H TRAY MOTOR CIRCUIT

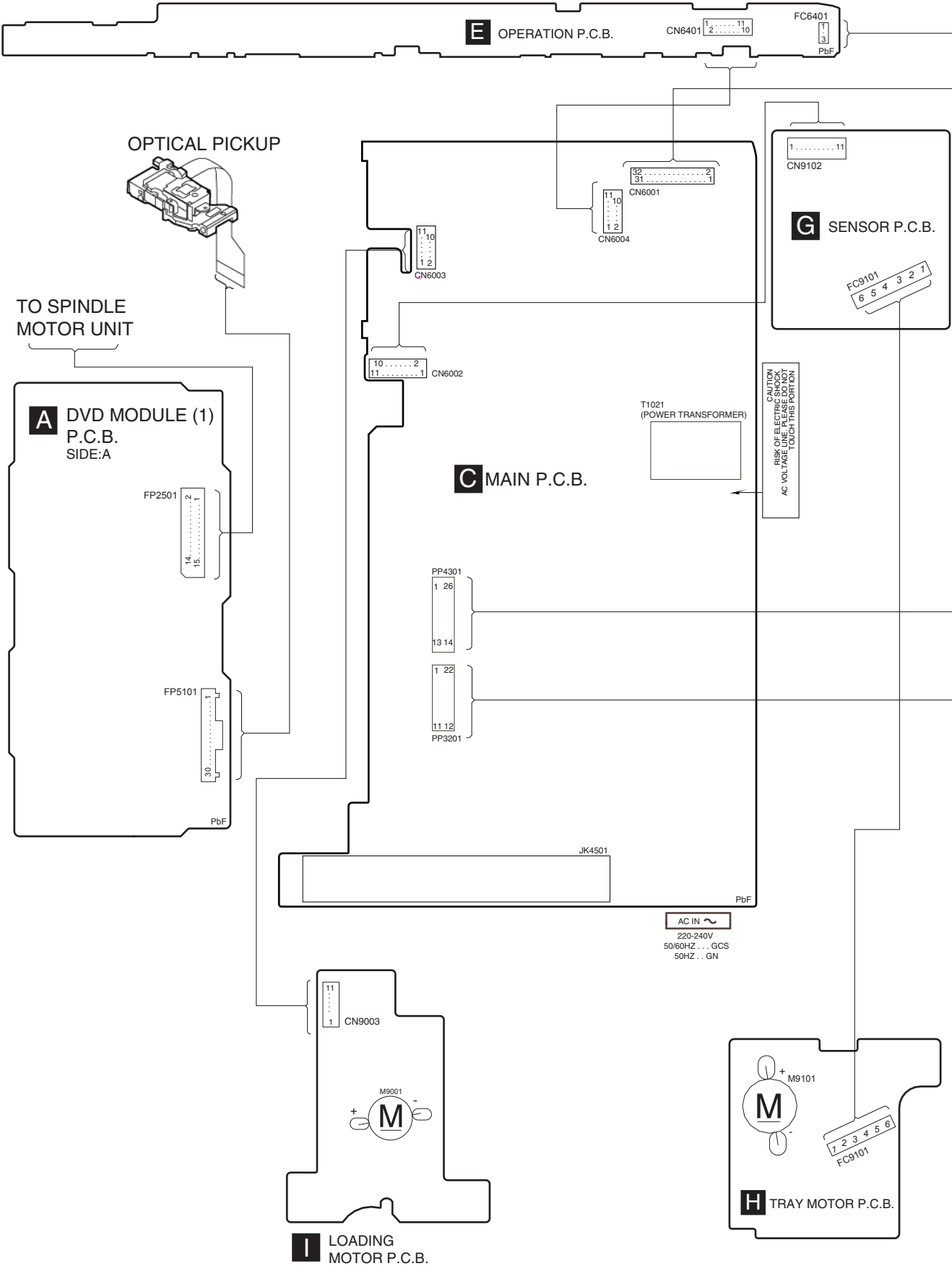


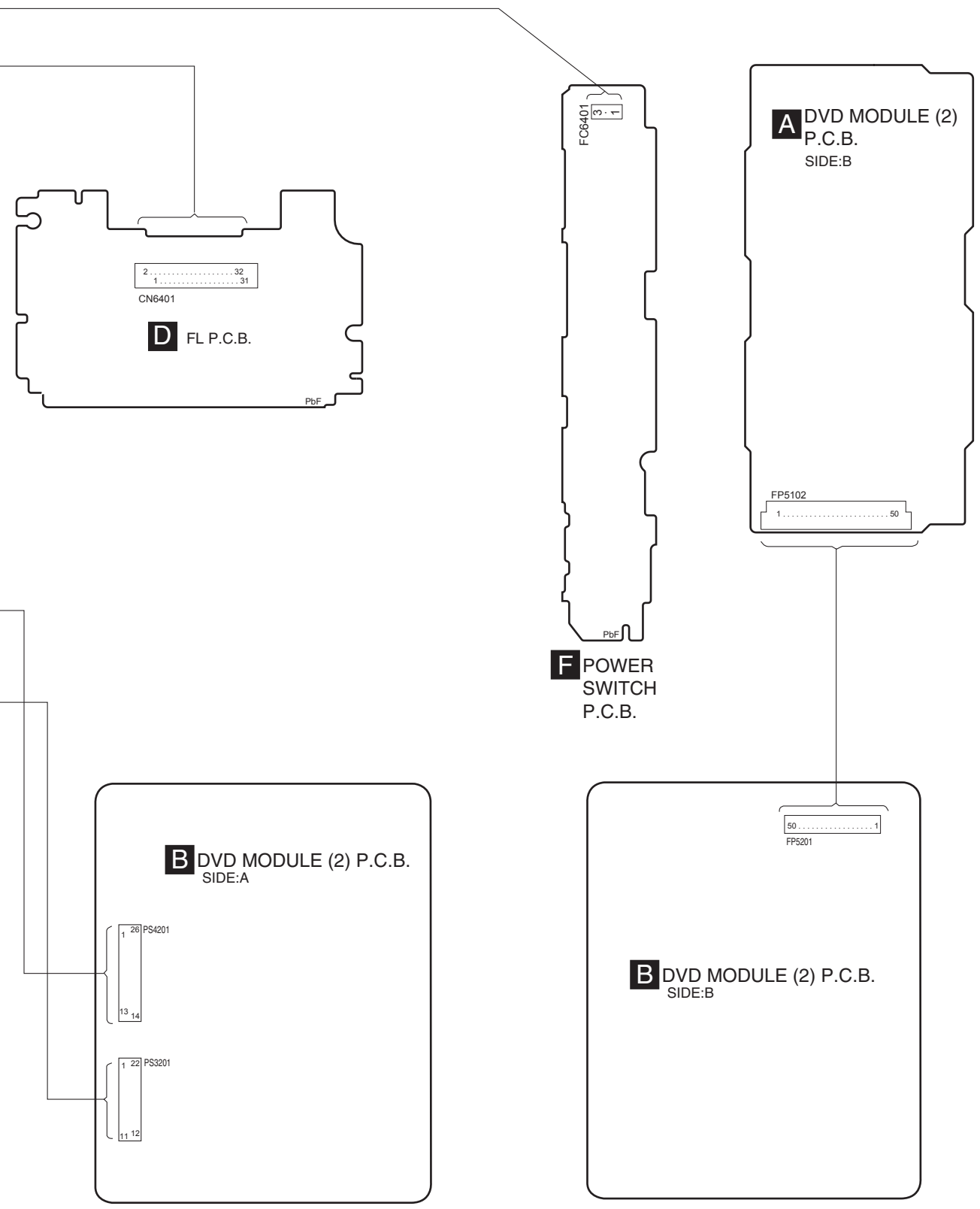
G SENSOR CIRCUIT

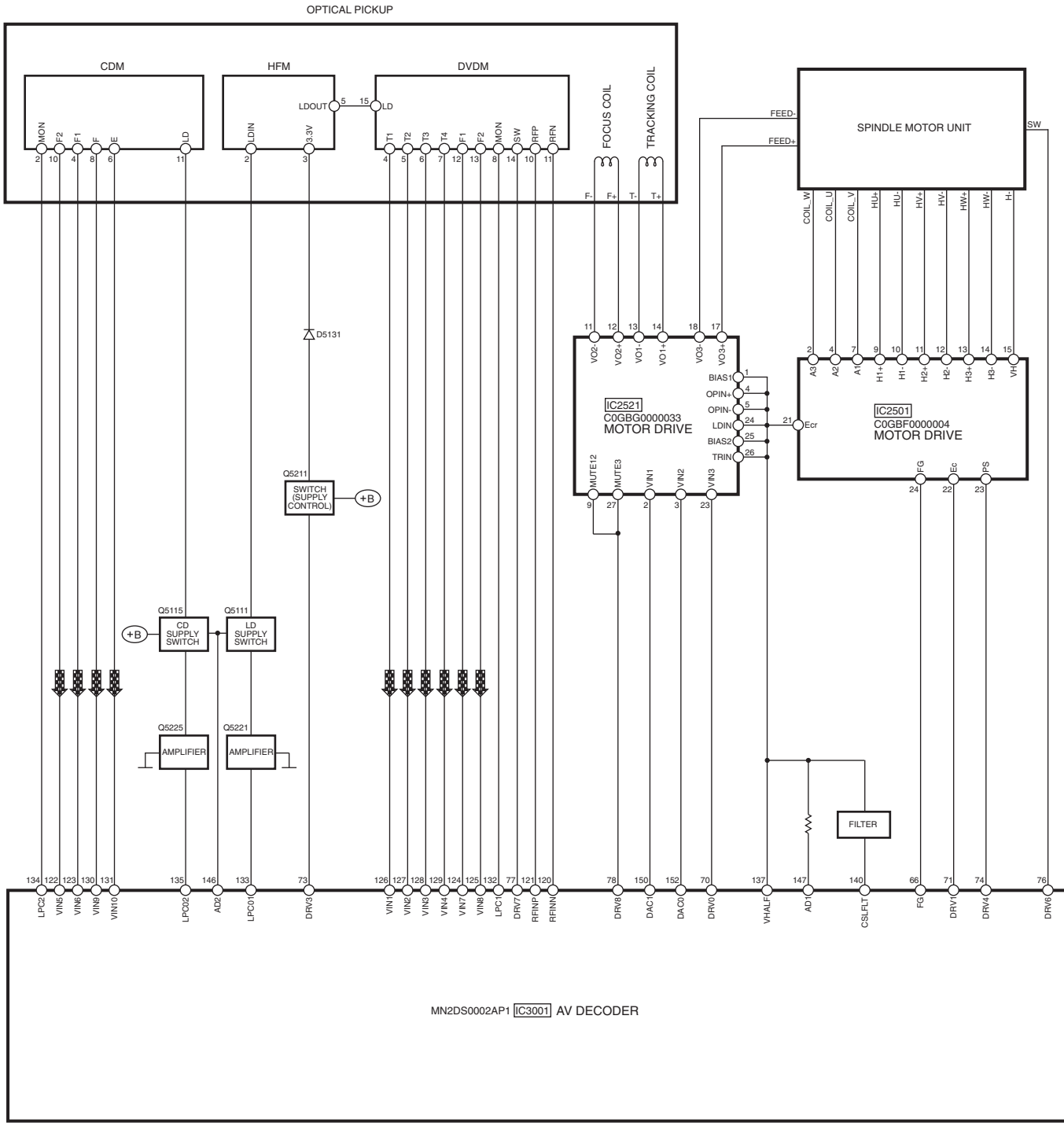


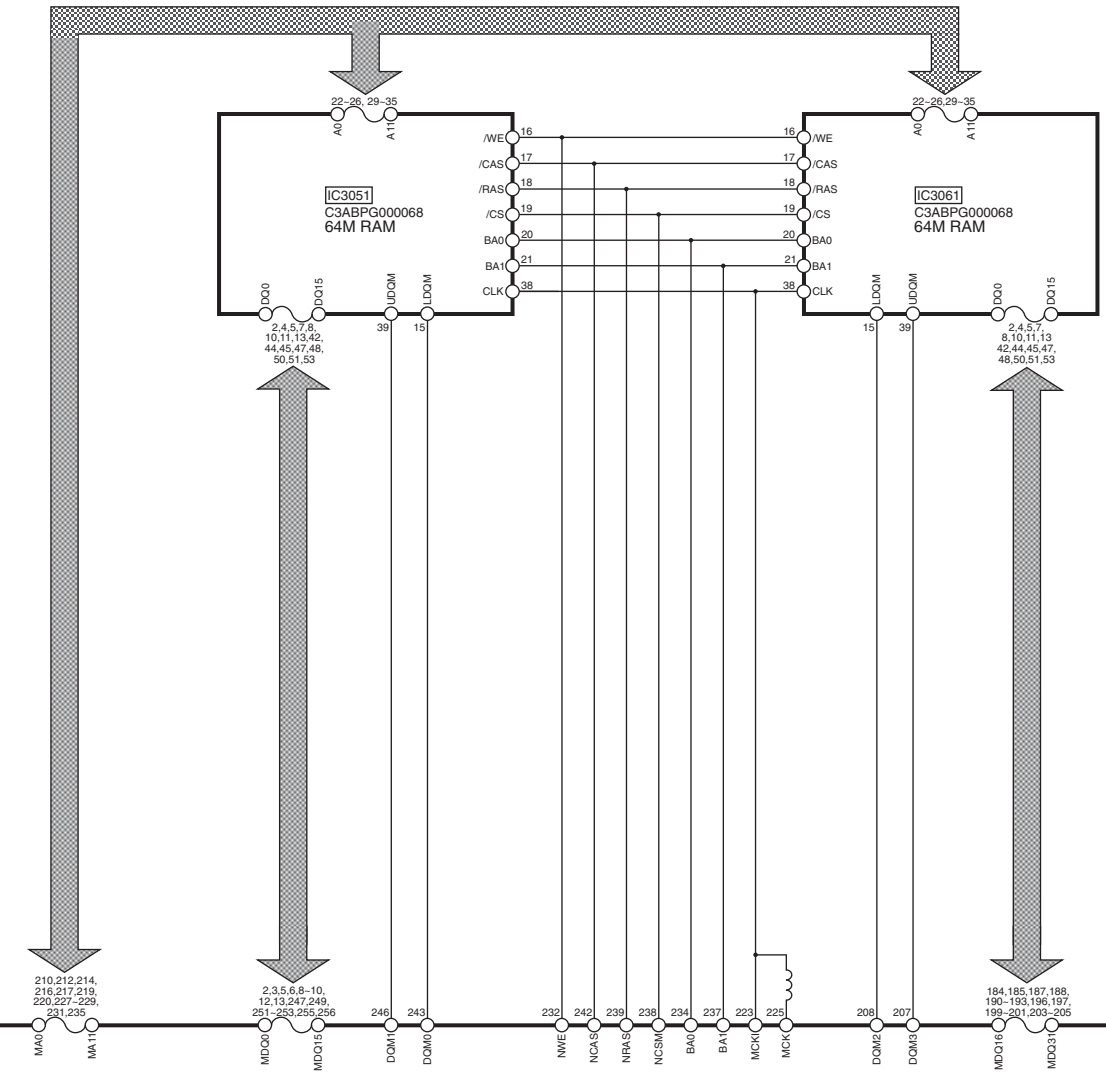
I LOADING MOTOR CIRCUIT



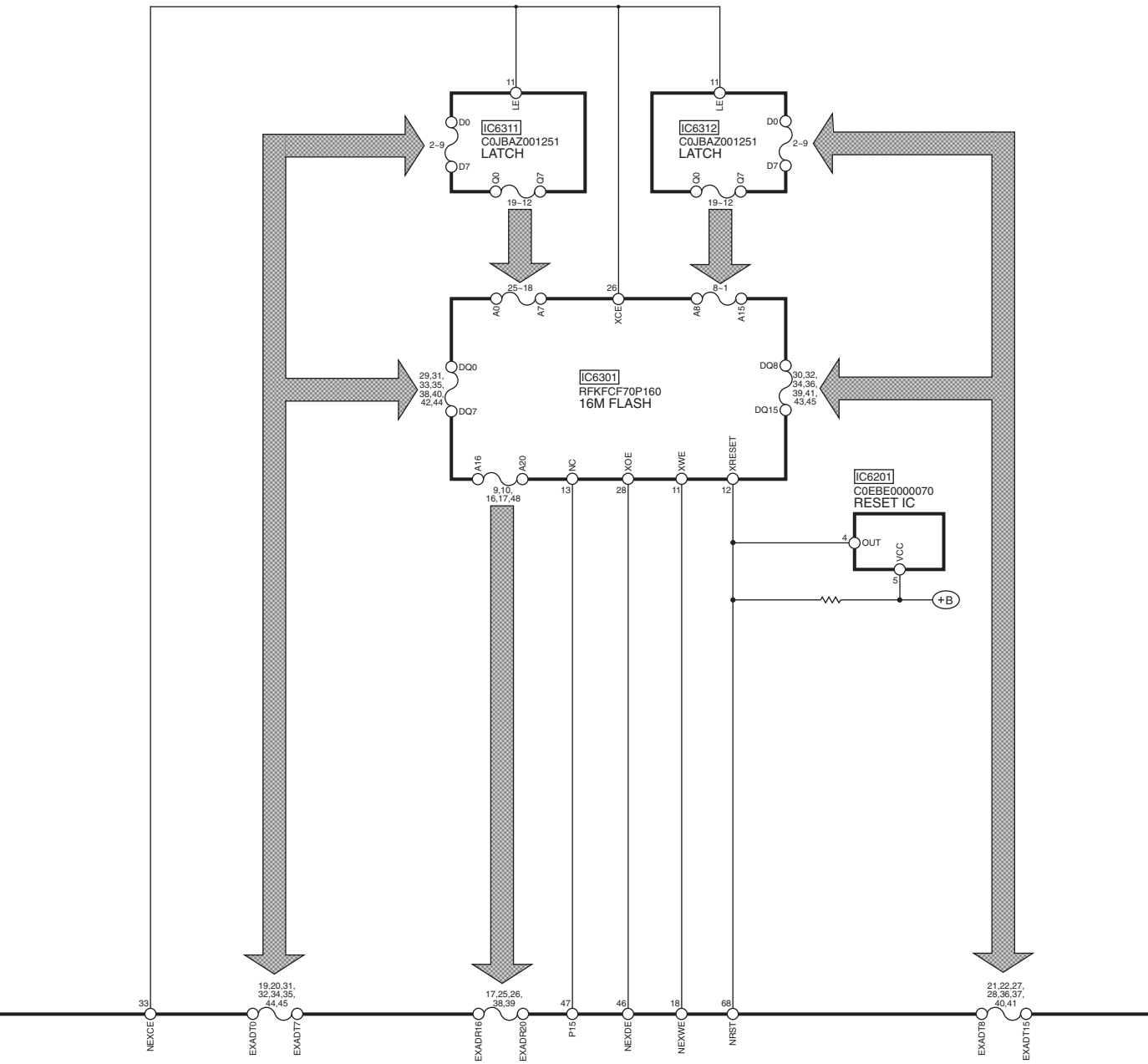

E OPERATION P.C.B.
CN6401
FC6401
PbF
OPTICAL PICKUP
TO SPINDLE MOTOR UNIT
CN6001
CN6004
CN6003
CN6002
CN9102
G SENSOR P.C.B.
FC9101
A DVD MODULE (1) P.C.B.
SIDE:A
FP2501
FP5101
PbF
T1021
(POWER TRANSFORMER)
CAUTION
RISK OF ELECTRIC CHOCK
AC VOLTAGE LINE, PLEASE DO NOT
TOUCH THIS PORTION
C MAIN P.C.B.
PP4301
PP3201
JK4501
PbF
AC IN
220-240V
50/60HZ . . . GCS
50HZ . . GN
CN9003
M9001
I LOADING MOTOR P.C.B.
M9101
FC9101
H TRAY MOTOR P.C.B.


2 32
1 31
CN6401
D FL P.C.B.
PbF
FC6401
3 . 1
PbF
F POWER SWITCH P.C.B.
A DVD MODULE (2) P.C.B.
SIDE:B
FP5102
1 50
50 1
FP5201
B DVD MODULE (2) P.C.B.
SIDE:B
B DVD MODULE (2) P.C.B.
SIDE:A
1 26 PS4201
13 14
1 22 PS3201
11 12

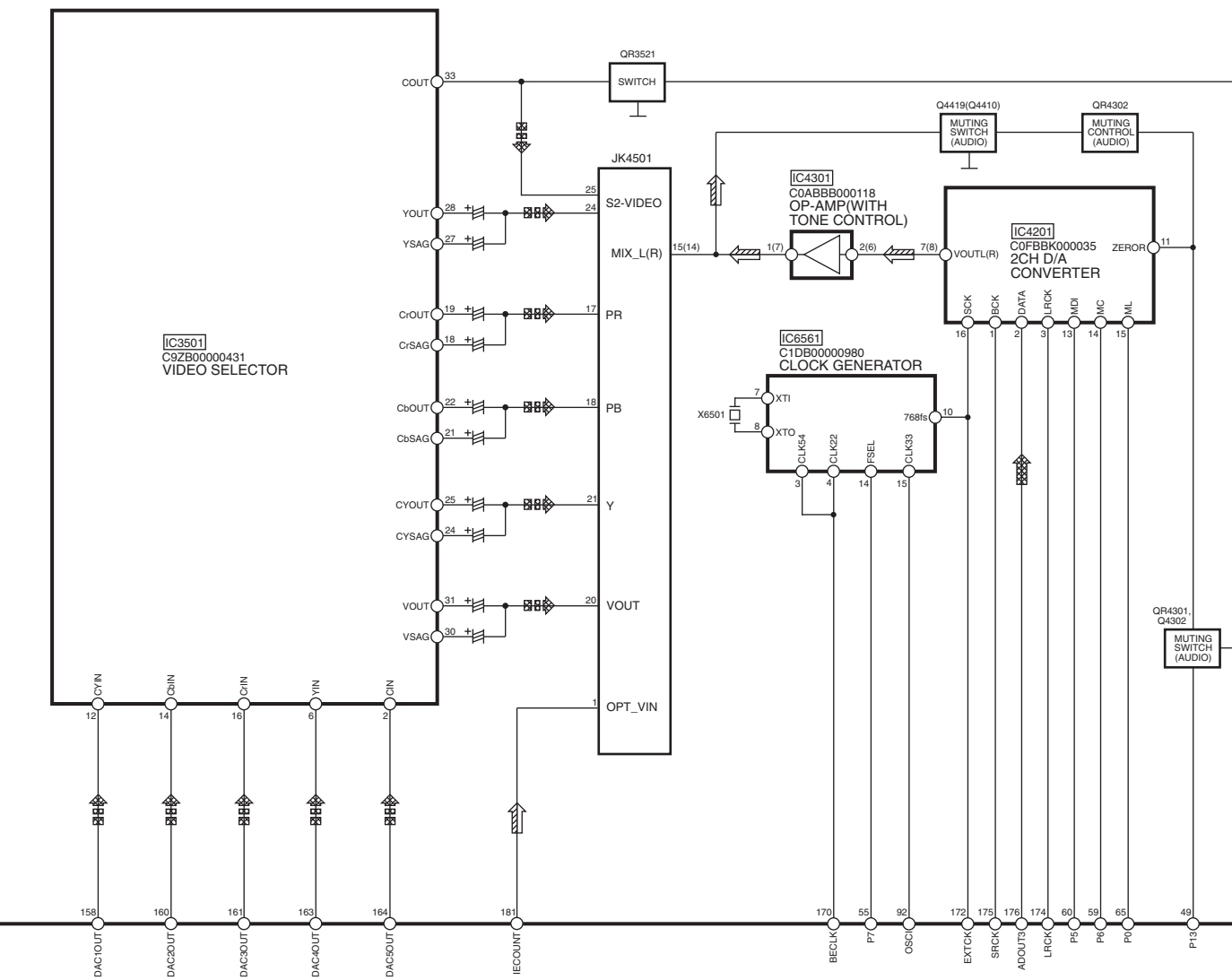

OPTICAL PICKUP
CDM
HFM
DVDM
MON
F2
F1
F
E
LD
LDIN
3.3V
LDOUT
5
15
LD
T1
T2
T3
T4
F1
F2
MON
SW
RFP
RFN
FOCUS COIL
TRACKING COIL
F-
F+
T-
T+
FEED-
FEED+
SPINDLE MOTOR UNIT
SW
COIL_W
COIL_U
COIL_V
HU-
HU+
HV-
HV+
HW-
HW+
H-
D5131
VO2-
VO2+
VO1-
VO1+
VO3-
VO3+
BIAS1
OPIN+
OPIN-
LDIN
BIAS2
TRIN
IC2521
C0GBG0000033
MOTOR DRIVE
A3
A2
A1
H1+
H1-
H2+
H2-
H3+
H3-
VH
Ecr
IC2501
C0GBF0000004
MOTOR DRIVE
MUTE12
MUTE3
VIN1
VIN2
VIN3
FG
Ec
FS
Q5211
SWITCH (SUPPLY CONTROL)
+B
Q5115
CD SUPPLY SWITCH
Q5111
LD SUPPLY SWITCH
Q5225
AMPLIFIER
Q5221
AMPLIFIER
FILTER
LPC2
VIN5
VIN6
VIN9
VIN10
LPC02
AD2
LPC01
DRV3
VIN1
VIN2
VIN3
VIN4
VIN7
VIN8
LPC1
DRV7
RFINP
RFINN
DRV8
DAC1
DAC0
DRV0
VHALF
AD1
CSLFLT
FG
DRV1
DRV4
DRV6
MN2DS0002AP1 IC3001 AV DECODER



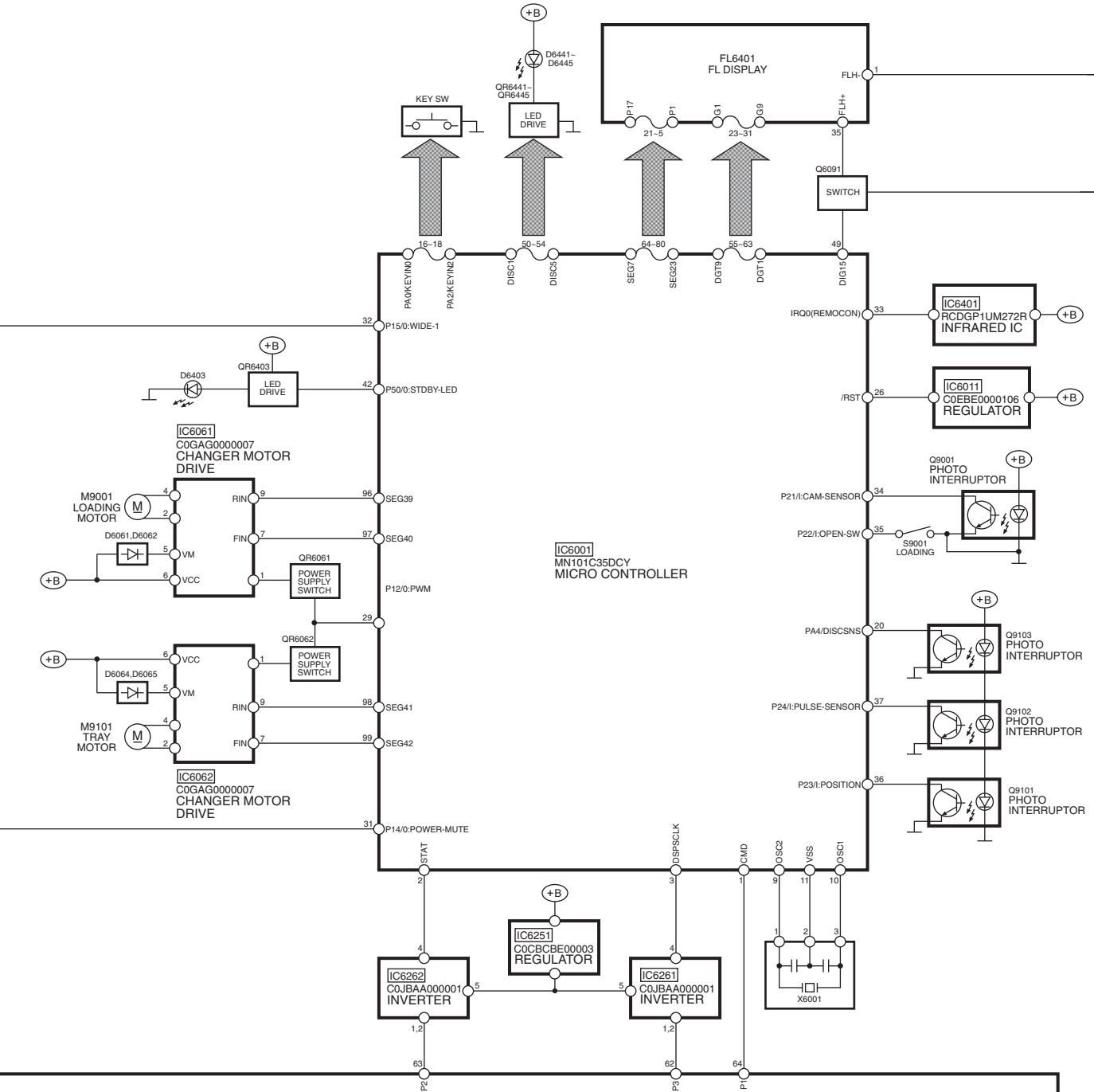
MN2DS0002AP1 IC3001 AV DECODER



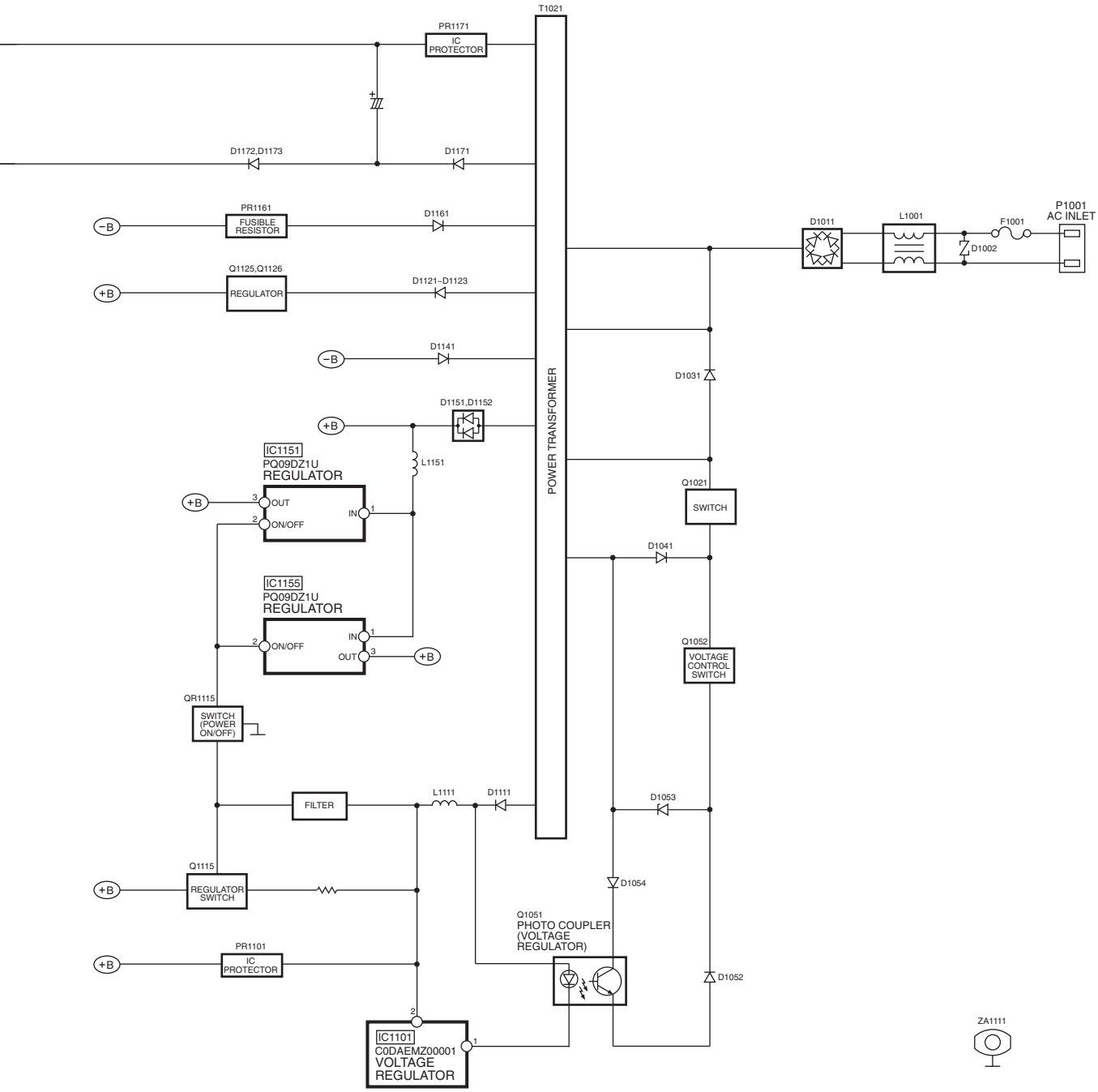
MN2DS0002AP1 IC3001 AV DECODER



MN2DS0002AP1 IC3001 AV DECODER



MN2DS0002AP1 IC3001 AV DECODER



SIGNAL LINES

: MAIN SIGNAL LINE

: CD-DA (AUDIO /VIDEO) SIGNAL LINE

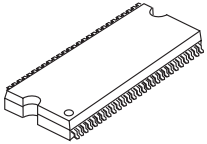
: DVD AUDIO SIGNAL LINE

: DVD VIDEO SIGNAL LINE

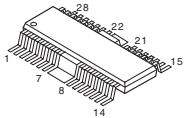
( ) Indicates the Pin No. of Right Channel.

NOTE : Signal Lines are applicable to the Left Channel only.

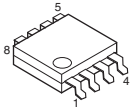
C3ABPG000063



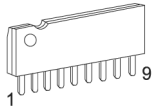
C0GBG0000033
C0GBF0000004



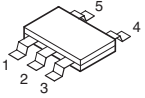
C0ABBB000118



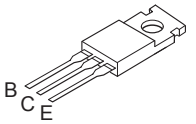
C0GAG0000007



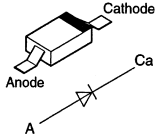
C0JBAA000001
C0EBE0000070



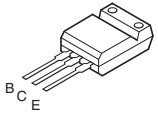
MIP0244SPSCF



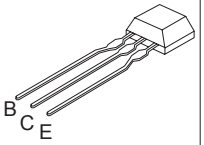
MA2J11100L



2SB14170JA



2SA1309ARA



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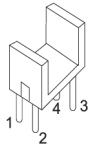
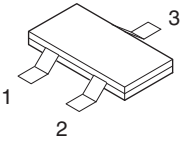
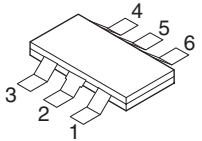


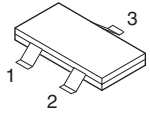
2SD132800L
2SD0601AHL
2SD1819A0L
UNR221300L
UNR221200L
UNR221100L
UNR521200L



XN0431100L



UNR521F00L



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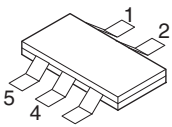

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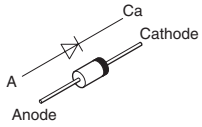
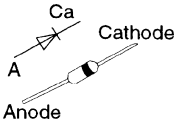
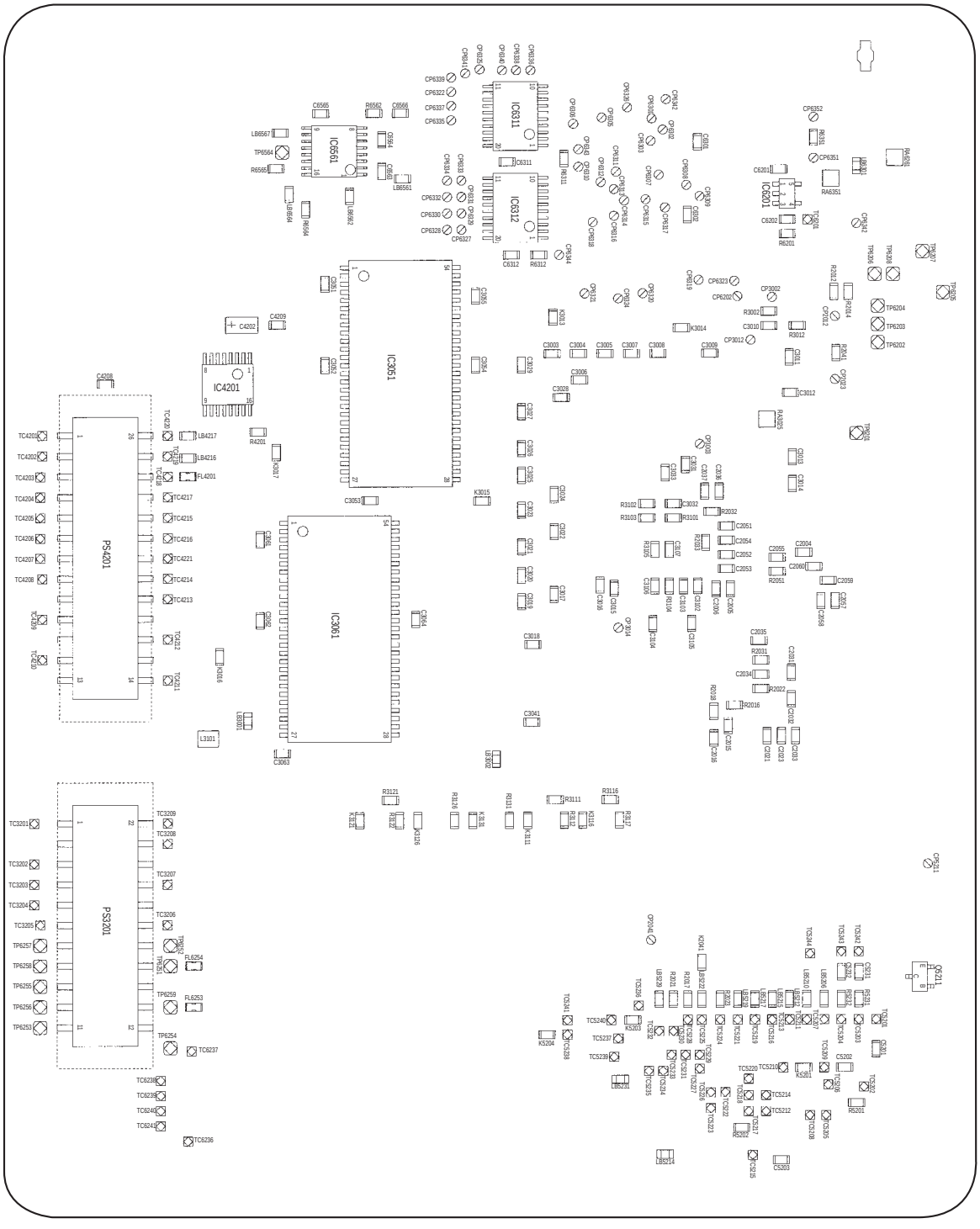


MA2J72800L

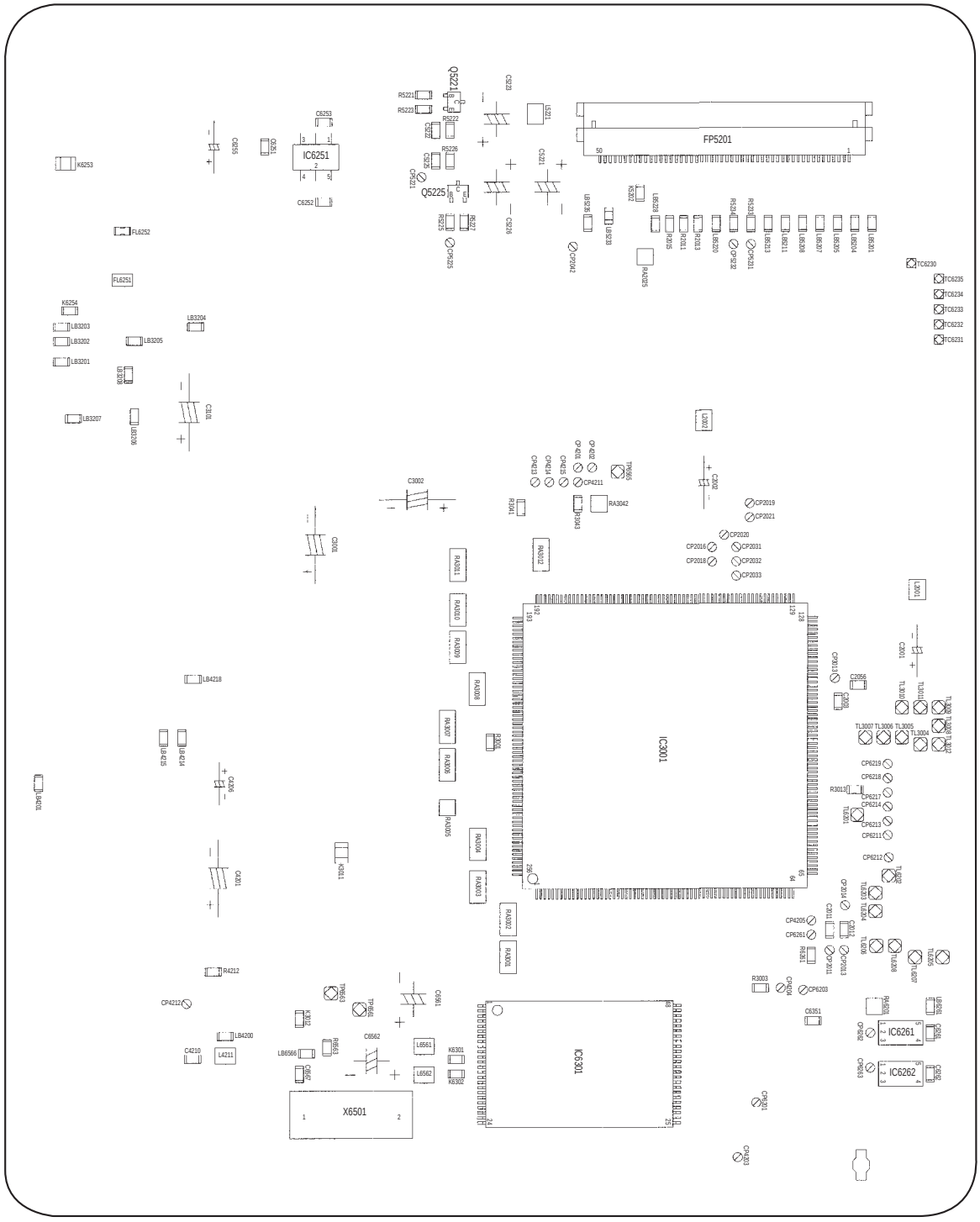


B DVD MODULE(2) P.C.B (REP3500C)

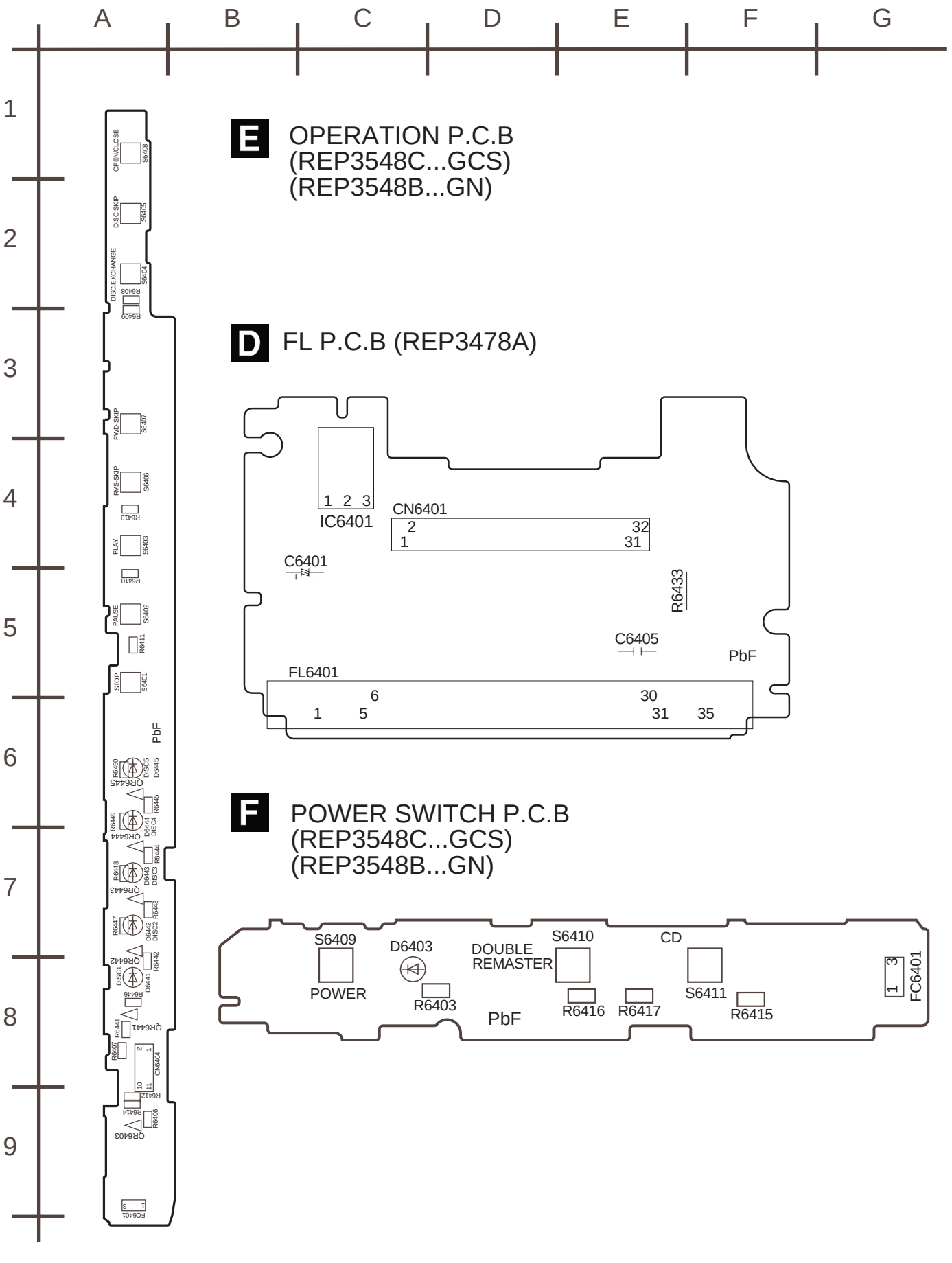


(SIDE:A)

B DVD MODULE(2) P.C.B (REP3500C)



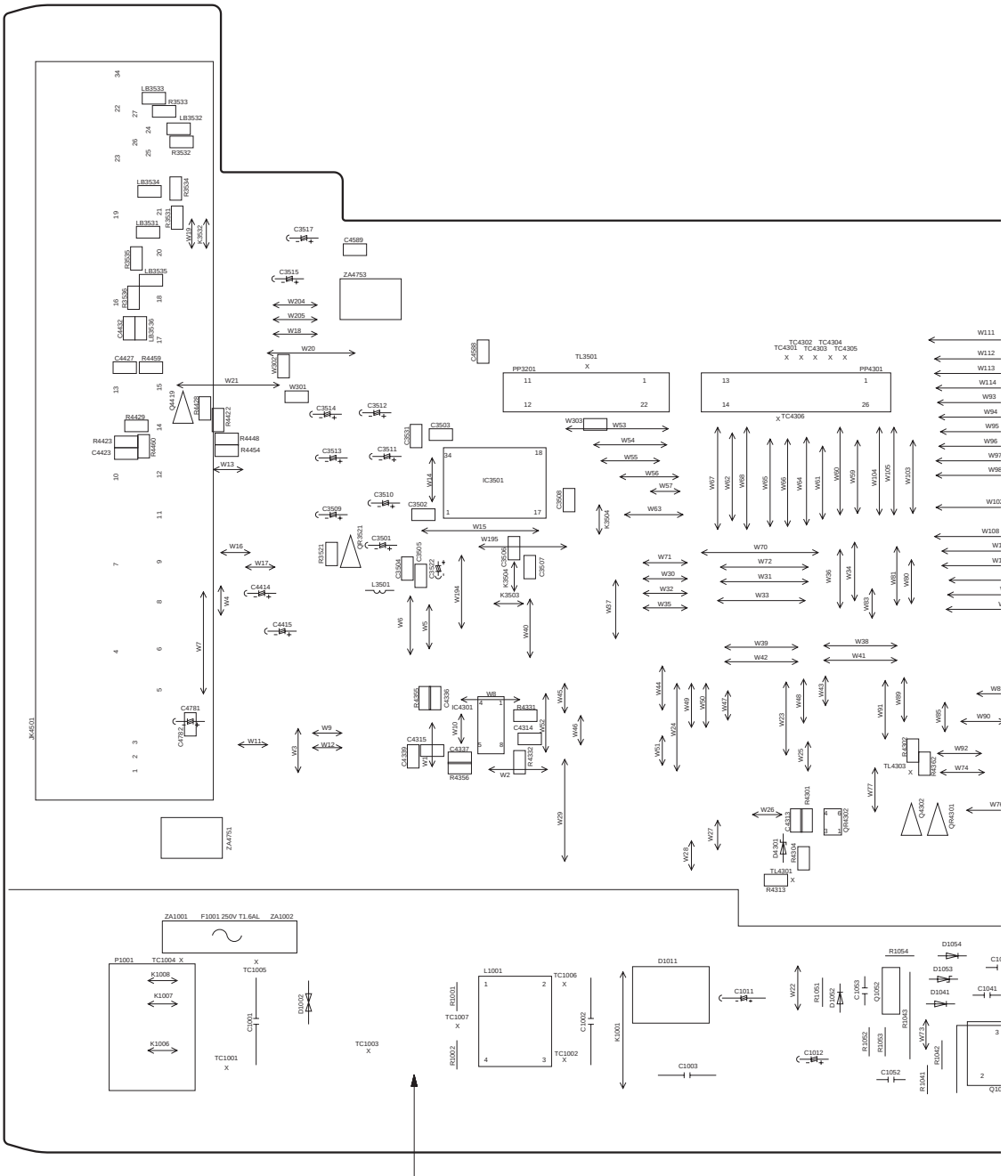
(SIDE:B)


A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
E
OPERATION P.C.B
(REP3548C...GCS)
(REP3548B...GN)
D
FL P.C.B (REP3478A)
1 2 3
IC6401
CN6401
2
1
32
31
C6401
R6433
C6405
PbF
FL6401
6
1
5
30
31
35
F
POWER SWITCH P.C.B
(REP3548C...GCS)
(REP3548B...GN)
S6409
POWER
D6403
R6403
DOUBLE
REMASTER
S6410
R6416
R6417
CD
S6411
R6415
PbF
1
3
FC6401

A B C D E F G

1 2 3 4 5 6 7 8 9

C MAIN P.C.B (REP3548C...GCS)
(REP3548B...GN)



AC IN ~
220V-240V
50/60HZ ... GCS
50HZ...GN

CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE. PLEASE DO NOT
TOUCH THIS PORTION